

# **Catalogue EOD**

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# MR-5 Explosive & Ordnance Disposal Robot

Art.Nr. 0100100



## MR5 - Features

The MR-5 is a new generation of Explosive & Ordnance Disposal Robots (EODR). It provides excellent precision and dexterity.

MR-5 is the medium size of MR series.

Police, Military, ERT, Fire, Nuclear, and other Hazardous Response personnel can utilize the multipurpose MR-5. The MR-5 could be used for surveillance, reconnaissance, handling of hazardous items, manipulation of suspected packages, neutralizing and handling such items as Improvised Explosive Devices (IED's), Hazardous Chemicals, and Radioactive Materials.

MR-5 is an all-weather all-terrain mobile robot for indoor (buildings, public institutions, airports, homes, etc.) and outdoor environments (terrain cluttered with obstacles, ditches, gravel, snow, mud, etc.). MR-5 is based on latest robotic and computer technologies for hazardous environment operations. MR-5 is remotely controlled, and consists of a robust platform, a dexterous robot arm, operator control station, communication links, and a variety of operational tools and accessories.

MR-5 has special features: quick-removable tracks, quick-removable articulated wheels in front and back for better stability on stairs and slopes, precise independent joint control, long reach, high payload, and expandable to autonomous navigation.





### Platform & Mobility

MR-5 is equipped with 6 wheels, a set of removable tracks, and a set of removable articulated wheels. The tracks are used for rough terrain and stair or slope climbing. The articulated wheels are used for climbing high obstacles and high slope stairs. The robot is able to turn-on-the-spot and manoeuvre precisely in an obstacle-cluttered area. The drives also features a drive-hub, which can disconnect the drive from the wheels to facilitate manhandling of the robot if necessary. The wheel/track system is very reliable for the very rough terrain.



## **Communication Systems**

MR-5 is remotely controlled by a wireless radio link; alternatively, an on-board automatic winding cable system, or an independent reeled cable system can be used. 2-way data & audio and I-way video links are available. Up to 4 cameras and a microphone provide the operator with images and sounds of the environment. The surveil-lance camera can be mounted on the arm (low to the ground, high in the air, close or far from the gripper) or on an articulated boom (usually positioned vertically) to provide excellent views.

### Wrist/Gripper

The MR-5 arm can be configured to perform desired operations: aiming and firing disrupters, pushing heavy payloads, reaching under cars or through car windows, breaking windows, etc. The robot can insert a car key to open car doors, manipulate sensory devices for inspection and surveillance, and handle delicate or hazardous materials. A force controlled high quality gripper provides dexterous handling capability. Various grippers can be attached to fit specific operations, payloads and tasks.

### **Environment**

MR-5 is water resistant, and all exposed surfaces are covered with anodizing or protective paint. All detector and electronics compartments are protected against water and contaminants. Operates in all types of weather conditions, day and night, and various types of wet and dry surfaces. Operational temperature range is from -20 to +45°C. Environmental humidity can be up to 95% at 25°C. Storage temperature range is from 0 to 45°C



# **MR-5** Specifications

MR-5 is suitable for operating indoor (buildings, homes, airports, train station) and outdoor (urban settings, rough terrains in obstacle cluttered environments, ditches, stairs, mud, gravel, etc.) The wheel/track system is very reliable. The tracks are mounted around the wheels so that the contact between wheels and tracks prevent damage or run-away of tracks when pieces of stone or gravel enter between the wheel and the track. The tracks are extremely durable due to a heavy-duty design and strength. An operator can dismount the tracks in a few minutes, and use only wheels when there is no need to climb over obstacles or up/down the stairs. A pair of articulated wheels prevents rollover while climbing or descending stairs, and help mounting high or wide obstacles

MR-5 can be used with weapons and tools for neutralization of improvised explosive devices, handling of explosive materials, suspicious parcels, and inspection of trapped vehicles.

MR-5 robot arm is unique in the sense that it provides servo-precision motion allowing the operator to approach to handle or hit a target with sub-millimeter accuracy. The operator can control several joints at once allowing the end-effector (gripper, weapon, tool) to move in any desired direction. The MR-5 is rugged as well as precise; it is capable of carrying very large and very small payloads with same gripper and same dexterity:

#### MR-5 manipulator couls have 7 joints:

turret, shoulder, elbow, wrist base, linear extension, and wrist roll. Various accessories can be attached to the arm. The tools and modules are quickconnected/disconnect units.

#### The MR-5 consists of:

Platform, Manipulator arm, Wrist, Gripper, Cameras, Control Station, Communication (cable and wireless) with Video and Audio links, and Accessories (Disrupters, XRay, Shotguns and Window breaker, etc.).

5

#### **Dimensions**

Width 70cm (27.5in) / Length 127cm (50in) / Height 79cm (31in)

#### Weight

Standard configuration 250kG (550lb); with accessories 300kg (660lb)

### **Climbing Ability**

45° stairs or slopes with tracks

Tracks can be installed and removed within a few minutes by one person

Obstacle height: 300mm (11.8in) / Obstacle width: 300mm (11.82in)

### **Maneuverability**

360° turns in a 1.4m (55in) circle / allows turning while driving;

Precise speedcontrol for each joint

incremental motion of each joint allows I - 5mm

### **Speed**

0 - .56 m/s (0 - 22 in/s)

 $0-2.0\ km/h$ , higher speed possible with geared transmission

#### **Operating Range**

Wireless RF 500m (1640ft) open-area / 200m urban

Onboard fiber-optic or coaxial cable 200m (656ft)

#### **Duration of Mission**

3 - 5- hours

#### **Tool Kit and Battery Charger**

Various tools for robot maintenance / Battery charger is a smartcharger, it recharges battery pack in 3 hours

### **Operating & User Manual**

#### Reach

Vertical: 2,5m (98 in) From ground (Standard configuration)

Horizontal: 1.75m (69 in) From front edge of platform (Standard)

## **Lift Capacity**

25 kg (55 lb) with arm fully extended / 120 kg (264 lb) above edge of platform

### Weapons / Tools

Disrupter mount and disrupter

Shotgun mount assembly and shotgun

X-ray mount assembly and x-ray unit

Window breaker assembly

Charge drop reel assembly

Other accessories by inquiring at **EODPartner** 

Firing circuits (0/24VDC with safety switch and timer delay): 2 on arm, 2 on vehicle

Relay circuits (open/close, 24VDC): 2 on arm, 2 on vehicle

#### Communication

Wireless link (2-way Data and Audio, I-way Video)

on-board fiberoptic or Coaxial Cable Automatic Winding

#### **Environmental**

Operates in all types of weather conditions, day and night, and various types of wet and dry surfaces

Operational temperature range from -20 to +45°C

Luftfeuchtigkeit bis zu 95% bei 25°C

Environmental humidity up tp 95% at 25°C

Storage temperature range from 0 to 45°C;

Weatherproof

#### **Modules**

Vehicle / Turret / Arm (Shoulder, Elbow) / Wrist (Base, Pitch, Roll) / Linear Extension / Gripper / Cameras / Cable & Wireless RF Communication / Control Station / Accessories such as Disrupter and various other attachments, etc.

### **Arm Configuration** Manipulator is a 2 to 7-axis robot with the following joints

Turret	Rotate the arm about vertical axis
Shoulder	Rotate the arm about horizontal axis
Elbow	Additional rotation about the horizontal axis
Wrist base	First wrist rotation
Wrist tilt (pitch)	Second wrist rotation axis
Linear extension	Linear extension between pitch and roll
Wrist roll	Third wrist rotation axis



# MR-5 Options

Articulated Wheels	Two 2-wheel frames connected to back and front panels of the platform; rotates Up: to 90° and Down: to 45°
Turret	Rotation (-120° to 180°)
Wrist Base Rotate	Roll joint (+/- 100°)
Wrist Pitch (Tilt)	Tilt joint (+/- 100°)
Linear Extension	Linear joint extending 150mm
Heavy-Duty Gripper	For extreme ruggedness
Gripper Camera	Color / Wide angle / Auto iris
Extension Arm	For Surveillance Camera 600mm
Infrared Camera	Enhanced low-light vision; Small weatherproof IR-sensitive camera with LED illumination; For 10ft in total darkness; External illumination unit can be added for longer distance
On-Board Cable Winding System	Mounted on vehicle; Free wheel unwind and automatic rewind; Fiber-optics or coaxial cable; length 200m (656 ft)
Wireless RF Communication Link	500m (1640ft) open area / 200m urban; 2-way data and audio / I-way video

# MR-5 Accessories

Disrupter Mount	Dual mount with quick-connect mechanism / Manually adjustable tilt angle
Disrupter Aiming & Firing System	Precision pan and tilt unit / Direct laser aiming / Resolution: +/- 0.5mm at 3m (+/- 0.02in at 10ft)
Disrupters	Proparm products or user selection
Shotgun Mount	
Laser Assembly	High power laser-pointer assembly (visible in bright sunshine); for disrupter pr shotgun mounts
Shotgun	12 gauge Franchi or user selection
Laser Range Finder	Distance measurement to 30m (100ft) / Accuracy 3mm (1/8 in)
X-ray Mount	X-ray system mount with quick connect mechanism
X-ray Mount X-ray Equipment	X-ray system mount with quick connect mechanism  Golden XR200 or user selection
•	• •
X-ray Equipment Window Breaker	Golden XR200 or user selection



# The professional manipulator for EOD / IED specialists



Precise movement provided by a zero-backlash manipulator arm with 7 articulated infinite-position joints. The MR5 offers (2) 300:1 zoom auto focus/auto iris and (2) fixed-focus (one is re-locatable) cameras. Near Infrared light/camera kit available.

Innovative wrist, pitch, and extender assembly offers virtually no play at full extension Rapidly deployable due to switchable integrated RF and fiber-optic communication links Elbow and shoulder with built-in turret are capable of lifting up to 130kg near the MR5's front edge

Driving lights positioned for proper night time operation

Capable of using popular LVIEDD accessories



Tracks allow robot to climb 45° stairs and travel on any terrain. They are easily and quickly removed or installed.

Remotely listen and speak with two-way audio and built-in microphone and loudspeaker

On-board system diagnostics

Independently controlled surveillance arm





Sensors integrated into robot's control system with switchable real-time onscreen display for optimal situational awareness

Onboard system diagnostics with realtime onscreen display for immediate corrective action

Infinite-position joysticks provide precise and smooth vehicle and arm joint control

All joysticks can be recalibrated quickly on site by user without additional tools

Firing circuits meet U.S. military safety standards for operator safety and prevention of accidential discharge



Large 15" daylight-readable LCD monitor for excellent Image readability

Monitor panel possesses front panel A/V recording jacks for convenience

RF and fiber optic communication links provide two-way audio and data and one-way video

If cut, the fiber optic communication link can automatically switch to RF mode for un-interrupted mission accomplishment

Control station has an integrated extended-life battery and radio for rapid deployment and redeployment Battery life of OCU and robot meet or exceed most mission requirements

Both the robot and the control station are weatherproof to IPX5 standards and can easily decontaminated

# MR-5 Standard Configuration

#### **Operator Control Station**

Portable / Enclosed in a weatherproof enclosure

Control panel with joysticks and switches to control all robot functions

Colour LCD monitor (diagonal 15" = 38 cm)

VCR connectors (for an external VCR or TV monitor)

Operates at 12 VDC or 110/220 VAC

2-way audio communication (microphone and 8-W speakers on the vehicle and at operator control station or headset

#### Video Display

Camera images (4) picture-in picture / Battery status / Diagnostic messages

#### **Platform**

Six-wheel drive for all terrain with two 24 V or 48 Vdrive motors controlled by highquality servo drivers; Optional: Articulated wheels (up 90 down 45) mounted on the back and front panels for added stability on ascent or descent of stairs and manoeuvrability over obstacles;

Light: Halogen - two 20 W lights on front of platform, one 20 W on the Surveillance Camera;

Speaker and Microphone

Battery pack: 24 V or 48 V removable with four Gel-Cell batteries / 64 Ah / Battery duration 3-5 hrs / On-board charging / Battery charger supplied

#### Tracks

For stair climbing, steep slopes, and rough terrain; mounted over the rubber wheels; can be removed and installed in 4 minutes.

#### On-Board Electronics

The on-board electronics and computer is based on the latest generation of Intel Pentium processors and stack of PC/104 boards for controlling the platform, arm, and communication. The electronics is very rugged and capable of withstanding all-terrain operation in out-door environments

#### Arm

Shoulder or back-arm allows rotation of the arm in vertical plane (215) / Elbow or forearm (260) / Forearm is used to attach interchangeable modules (Wrist & Gripper, Cameras, and Accessories etc).

#### Wrist Roll

Roll joint (+/- 100°)

#### Gripper

Standard gripper up to 12 in (0.3 m) fully open / Proportional gripping force / Max. gripping force 36 Kgf (80 lbf)

# Arm (Relocatable) Camera

Color / Wide-angle lens / Auto iris.



#### **Surveillance Camera & Extension:**

Color CCD / Remote zoom (72:1) / Remote focus / Auto iris / Pan  $\pm$ - 170 0 / Tilt  $\pm$ - 170 0 Optional: Extension parallelogram arm: 60 cm.

#### **Drive Camera**

Color / Wide-angle Iens / Auto iris

#### Cable Reel

656 ft (200 m) of standard cable on a reel assembly / Free wheel unwind and manual rewind

# MR-5 Configuration »A«

Six wheeled, removable track

Remote vehicle assembly

PC104 technology

On board system diagnostics

Modular construction

Easy maintenance

Seven degrees of freedom precision movement arm with zero backlash that includes Turret, Rotate, Shoulder, Elbow, Wrist Pivot, Wrist Rotate, Wrist Extend & Gripper

Wide Angle, fixed focus lens color drive camera, 300: I optical/digital zoom color gripper camera, 300: I optical/digital zoom or color surveillance camera with pan and tilt, surveillance camera extender that raises the PTZ camera

4th/relocatable camera option

2-way audio

8 relay circuits

8 firing circuits with redundant safety feature

48VDC battery pack (with current sensor) in vehicle with external charger

all cables with 1/4 turn connectors

Tool kit

Operation/Maintenance Manual

Two Year warranty

Table Top Controller Assembly, powder coated weatherproof enclosure (21.25" wide  $\times$  14,25" deep  $\times$  10.375" high)

Control panel has a 15 inch self-compensating daylight readable LCD monitor with Quad View option to view 4 cameras

Control station has joysticks for infinitely precise control of drive and manipulator joints

12VDC battery and charger

Hand Controller Assembly

# Fiber Optic Communication Option – Cable reel with I 200 ft of fiber optic cable with electric, guided rewind

MR-5 Configuration »B«

Six wheeled, removable track

Remote vehicle assembly

PC104 technology

On board system diagnostics

Modular construction

Easy maintenance

Seven degrees of freedom precision movement arm with zero backlash that includes Turret, Rotate, Shoulder, Elbow, Wrist Pivot, Wrist Rotate, Wrist Extend & Gripper

Wide Angle, fixed focus lens color drive camera, 300: I optical/digital zoom color gripper camera, 300: I optical/digital zoom or color surveillance camera with pan and tilt, surveillance camera extender that raises the PTZ camera

4th/relocatable camera option

2-way audio

8 relay circuits

8 firing circuits with redundant safety feature

48VDC battery pack (with current sensor) in vehicle with external charger

all cables with 1/4 turn connectors

Tool kit

Operation/Maintenance Manual

Two Year warranty

Table Top Controller Assembly, powder coated weatherproof enclosure (21.25" wide x 14,25" deep x 10.375" high)

Control panel has a 15 inch self-compensating daylight readable LCD monitor with Quad View option to view 4 cameras

Control station has joysticks for infinitely precise control of drive and manipulator joints

12VDC battery and charger

Hand Controller Assembly

Wireless Communication Option – Radio with 5 Watt video system + 2-way audio

# MR-5 Konfiguration »C«

Six wheeled, removable track

Remote vehicle assembly

PC104 technology

On board system diagnostics

Modular construction

Easy maintenance

Seven degrees of freedom precision movement arm with zero backlash that includes Turret, Rotate, Shoulder, Elbow, Wrist Pivot, Wrist Rotate, Wrist Extend & Gripper

Wide Angle, fixed focus lens color drive camera, 300: I optical/digital zoom color gripper camera, 300: I optical/digital zoom or color surveillance camera with pan and tilt, surveillance camera extender that raises the PTZ camera

4th/relocatable camera option

2-way audio

8 relay circuits

8 firing circuits with redundant safety feature

48VDC battery pack (with current sensor) in vehicle with external charger

all cables with 1/4 turn connectors

Tool kit

Operation/Maintenance Manual

Two Year warranty

Table Top Controller Assembly, powder coated weatherproof enclosure (21.25" wide  $\times$  14,25" deep  $\times$  10.375" high)

Control panel has a 15 inch self-compensating daylight readable LCD monitor with Quad View option to view 4 cameras

Control station has joysticks for infinitely precise control of drive and manipulator joints

12VDC battery and charger

Hand Controller Assembly

Fiber Optic Communication Option -

Cable reel with 1200 ft of fiber optic cable with electric, guided rewind

Wireless Communication Option -

Radio with 5 Watt video system + 2-way audio

**Redundant Communication Option** 



# Hook & line kit I

Art.Nr. 0200100



# Technical specification

#### Reel



- Diameter / Width 180mm / 95mm
- Weight 230g reel, 185g Handle

#### **Main Line**

- 4mm fitted with snap hook
- Length 100m

### **Secondary Line**

- 5mm
- Length 10m

## 2 Rope Pulling Handles



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- Size 95 x 17 mm

## 2 Snatch Blocks / Pulleys



- L x W x D 77 x 45 x 30 mm
- Sheave diameter 30mm
- Line diameter up to 13mm

#### 16 Hooks



	Weight	Qty
Small single plain	36g	2
Medium single plain	43g	2
Medium double plain	55g	2
Large single plain	73g	2
Small single barbed tang	36g	2
Medium single barbed tang	43g	2
Large single barbed tang	73g	2
Medium double barbed tang	55g	2

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#### 4 Eyes





- Diameter 25mm
- Weight 45g

### 2 Belt Slings



• Weight 175g

### 8 Stainless Steel Extension Rods

- Weight 180g
- Diameter / Length 16mm / 300mm

## **Plastic Case with Foam Cutout**

H & L Kit I weight: 8,4 kg

# Hook & line kit 2

Art.Nr. 0200200



# Technical specification

2	Ree	ls
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• Durchmesser 280mm

# Main Line 5mm fitted with Snap Hook

Diameter	5mm
Length	120m

## 2 Rope Pulling Handles

- Material: Aluminium
- Weight: normal / small 70g / 52g
- Size: normal / small 189  $\times$  17 mm / 95  $\times$ 17mm

#### 4 Snatch Blocks / Pulleys

• L x W x D	77 x 45 x 30 mm
Sheave diameter	30mm
Line diameter	up to 13mm

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12 Hooks	Weight	Qty
Small single plain	36g	2
Medium single plain	43g	2
Medium double plain	55g	2
Large single plain	73g	2
Medium double barbed tang	55g	2
Triple barb		2

## 5 Eyes

6 Rope Slings	Length	Qty
• Weight		45g
• Diameter		25mm

Rope sling 3mm	2m	2
Rope sling 4mm	2m	2
Rope sling 5mm	2m	2
<b>6</b> Wire Sling	Length	Qty
<b>6</b> Wire Sling Drahtschlinge 1,5mm	Length 2m	Qty 2
G	J	Qty 2 2
Drahtschlinge 1,5mm	2m	Qty 2 2 2

9 Pitons	Weight	Qty
big	66g	3
medium	62g	3
small	57g	3

#### 3 Suction Pads





Weight

Qty

Single Double	330g 581g	2
4 Aluminium Screwgate • Weight • Opening • Breaking load	Karabiners	100g 25mm 25kN
8 Schock Chords Qty Schock Chord 10mm Schock Chord 10mm	Length I m 2 m	2

#### 2 Cantilever Clamps



<ul><li>Length</li><li>Maximum jaw opening</li><li>Weight</li><li>Maximum working load</li></ul>	220mm 50mm 770g 50kg
2 Self Locking Forceps • Length • Jaw length • Elongation	ses 175mm 35mm up to 200% under tension
2 Self Locking Mole Grips with Eye • Eye diameter 25mm  Plastic Case wit Foam Cutout	

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Kit 2 weight: 12,6 kg



# Hook & line kit 3

Art.Nr. 0200300



# Technical specification

A heavy-duty kit for moving vehicles or heavy suspect devices. The kit contains a range of rated slings and heavy-duty snatch blocks. It comes with a solid carrying case and a 150 m rope on a reel.

150 m reel, with 8 mm line, 4500 kg strength, low stretch	1
Webbing sling, 2 m lg, eyes each end, rated 2000 kg	2
Webbing sling, 6 m lg, eyes each end, rated 2000 kg	2
Round sling, Im diameter, rated 1000 kg	2
Round sling, 2m diameter, rated 1000 kg	2
Round sling, 4m diameter, rated 1000 kg	2
Ground anchor 300 mm	2
Ground anchor 500 mm	2
Ground anchor 900 mm	2
D shaped shakle, 32 mm x 64 mm, max load 4000 kg	2
D shaped shakle, 24 mm x 48 mm, max load 3000 kg	4
Block with saftey lotch, 3000 kg rating	4
Hook with eye, I20 wide mouth	2
Solid case, watertight, unbreakable, MIL-STD 4150-J	I



A kit with tools specifically designed for use in buildings. A single reel is included, and the kit comes complete in a canvas carrying case, including a 3m telescopic pole.





**ODP**artner

20 Content

Reel 280 mm with	2
100 m rope 6 mm, fitted with snap hook	ı
100 m rope 5 mm, fitted with snap hook	I
pulling handle for rope small	I
pulling handle for rope	I
snatch blok	2
hook, small single plain	I
hook, medium single plain	ı
hook, medium double plain	2
hook, large single plain	I
25 mm eye	2
rope sling, 3 mm dia x 2 m long	2
rope sling, 4 mm dia x 2 m long	2
rope sling, 5 mm dia x 2 m long	2
wire sling, 1,5 mm dia x 2 m long	I
wire sling, 2 mm dia x 2 m long	I
wire sling, 3 mm dia x 2 m long	I
piton, large spear point	I
piton, small chisel point	I
piton, large chisel point	I
Anchor for 8 mm hole	2
double suction pad	ı
cantilever clamp	2
light weight spring grip	2
self locking forceps	I
self locking "mole grip"with 25 mm eye	I
screw eye self tap	6
screw eye self tap	6
adjustable clamp system I	
karabiner (Alloy) 23 mm screwgate 22kN	2
karabiner (Alloy) 23 mm quoterturngate 22kN	2
shackle D shape 13 mm gate I	
Bow Shackle 13 mm	I
Long Shackle D shape 13 mm gate	I
Twisted Shackle D shape 13 mm gate	I
Carabiner 8 mm Gate	I

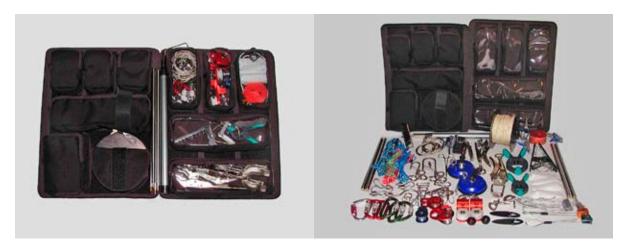


Carabiner 7 mm Screwate 12mm	I
Carabiner I2 mm Gate I	
Carabiner 12 mm Screwate 12mm	I
multifunction pocket tool kit	I
Extension Rod steiness steel 400 mm	I
Extension Rod steiness steel 800 mm	I
line branch	I
telescopic pole	I
hook, 25 mm widw mouth and spring loaded gate	1
hook, 50 mm widw mouth and spring loaded gate	I
Holder for Hooks	I
triple hook	2
Hook mount for telescopic pole	I
security mirror	1
belt sling	I
pulley with jammer cleat	I
self relieving snatch block	4
splitter Ball	2
self adhezive pad anchor	10
doorway anchor 700-1100 mm with eyes	2
sledge	I
doorstop	4
Plastic case with foam cutout	T
Bag for Reels with Main Rope's	I



# Special hook & line kit in a backpack

Art.Nr. 0200500



A hook and line kit designed for special forces. The kit comes in a rigid rucksack including the following items:

I Main Line - 100 m 4 mm       1         2 Reel 180 mm for main line       1         3 Secondary line 5mm 5 m       1         4 Hook, small single plain       1         5 Hook, medium single plain       1         6 Hook, medium double plain       2         7 Hook, large single plain       1         8 25 mm eye       4         9 O ring for pad anchor and hooks       6         10 light weight spring grip - small       1         11 self locking ,mole grip" with 25 mm eye       1         12 self adhezive pad anchor       14         13 Suction anchor, single pad       2         14 Shock cord 10 mm, Im with steel hook       1         15 Shock cord 10 mm, 2m with hook       1         16 self locking forceps       1         17 Rope sling, 3 mm dia x 2 m long       2         18 Rope sling, 4 mm dia x 2 m long       2         19 Rope sling, 5 mm dia x 2 m long       2         20 Wire sling, 1,5 mm dia x 2 m long       1	Description	Qty
3 Secondary line 5mm 5 m       1         4 Hook, small single plain       1         5 Hook, medium single plain       1         6 Hook, medium double plain       2         7 Hook, large single plain       1         8 25 mm eye       4         9 O ring for pad anchor and hooks       6         10 light weight spring grip - small       1         11 light weight spring grip grip       1         12 self locking "mole grip" with 25 mm eye       1         12 self adhezive pad anchor       14         13 Suction anchor, single pad       2         14 Shock cord 10 mm, Im with steel hook       1         15 Shock cord 10 mm, 2m with hook       1         16 self locking forceps       1         17 Rope sling, 3 mm dia x 2 m long       2         18 Rope sling, 4 mm dia x 2 m long       2         19 Rope sling, 5 mm dia x 2 m long       2          19 Rope sling, 5 mm dia x 2 m long       2	I Main Line - 100 m 4 mm	I
4 Hook, small single plain       1         5 Hook, medium single plain       1         6 Hook, medium double plain       2         7 Hook, large single plain       1         8 25 mm eye       4         9 O ring for pad anchor and hooks       6         10 light weight spring grip - small       1         11 light weight spring grip       1         11 self locking "mole grip" with 25 mm eye       1         12 self adhezive pad anchor       14         13 Suction anchor, single pad       2         14 Shock cord 10 mm, 1m with steel hook       1         15 Shock cord 10 mm, 2m with hook       1         16 self locking forceps       1         17 Rope sling, 3 mm dia x 2 m long       2         18 Rope sling, 4 mm dia x 2 m long       2         19 Rope sling, 5 mm dia x 2 m long       2	2 Reel 180 mm for main line	I
5 Hook, medium single plain16 Hook, medium double plain27 Hook, large single plain18 25 mm eye49 O ring for pad anchor and hooks610 light weight spring grip - small111 light weight spring grip112 self locking "mole grip" with 25 mm eye112 self adhezive pad anchor1413 Suction anchor, single pad214 Shock cord 10 mm, Im with steel hook115 Shock cord 10 mm, 2m with hook116 self locking forceps117 Rope sling, 3 mm dia x 2 m long218 Rope sling, 4 mm dia x 2 m long219 Rope sling, 5 mm dia x 2 m long2	3 Secondary line 5mm 5 m	I
6 Hook, medium double plain  7 Hook, large single plain  8 25 mm eye  4  9 O ring for pad anchor and hooks  6  10 light weight spring grip - small  11 light weight spring grip - small  11 self locking "mole grip" with 25 mm eye  12 self adhezive pad anchor  14 13 Suction anchor, single pad  13 Suction anchor, single pad  14 Shock cord 10 mm, Im with steel hook  15 Shock cord 10 mm, 2m with hook  16 self locking forceps  17 Rope sling, 3 mm dia × 2 m long  18 Rope sling, 4 mm dia × 2 m long  19 Rope sling, 5 mm dia × 2 m long  20	4 Hook, small single plain	I
7 Hook, large single plain       1         8 25 mm eye       4         9 O ring for pad anchor and hooks       6         10 light weight spring grip - small       1         11 light weight spring grip       1         11 self locking "mole grip" with 25 mm eye       1         12 self adhezive pad anchor       14         13 Suction anchor, single pad       2         14 Shock cord 10 mm, 1m with steel hook       1         15 Shock cord 10 mm, 2m with hook       1         16 self locking forceps       1         17 Rope sling, 3 mm dia x 2 m long       2         18 Rope sling, 4 mm dia x 2 m long       2         19 Rope sling, 5 mm dia x 2 m long       2	5 Hook, medium single plain	I
8 25 mm eye 4 9 O ring for pad anchor and hooks 6 10 light weight spring grip - small 1 11 light weight spring grip - small 1 11 self locking "mole grip" with 25 mm eye 1 12 self adhezive pad anchor 14 13 Suction anchor, single pad 2 14 Shock cord 10 mm, 1m with steel hook 1 15 Shock cord 10 mm, 2m with hook 1 16 self locking forceps 1 17 Rope sling, 3 mm dia x 2 m long 2 18 Rope sling, 4 mm dia x 2 m long 2 19 Rope sling, 5 mm dia x 2 m long 2	6 Hook, medium double plain	2
9 O ring for pad anchor and hooks  10 light weight spring grip - small  11 light weight spring grip 1  11 self locking "mole grip" with 25 mm eye 1  12 self adhezive pad anchor 14  13 Suction anchor, single pad 2  14 Shock cord 10 mm, Im with steel hook 1  15 Shock cord 10 mm, 2m with hook 1  16 self locking forceps 1  17 Rope sling, 3 mm dia x 2 m long 2  18 Rope sling, 4 mm dia x 2 m long 2  19 Rope sling, 5 mm dia x 2 m long 2  20 Shock cord 10 mm, 2m dia x 2 m long 2  21 Shock spring short	7 Hook, large single plain	I
10 light weight spring grip - small  11 light weight spring grip  11 self locking "mole grip" with 25 mm eye  12 self adhezive pad anchor  14 13 Suction anchor, single pad  2 14 Shock cord 10 mm, 1m with steel hook  15 Shock cord 10 mm, 2m with hook  16 self locking forceps  17 Rope sling, 3 mm dia x 2 m long  18 Rope sling, 4 mm dia x 2 m long  19 Rope sling, 5 mm dia x 2 m long  2 19 Rope sling, 5 mm dia x 2 m long  2 2	8 25 mm eye	4
11 light weight spring grip111 self locking "mole grip" with 25 mm eye112 self adhezive pad anchor1413 Suction anchor, single pad214 Shock cord 10 mm, 1m with steel hook115 Shock cord 10 mm, 2m with hook116 self locking forceps117 Rope sling, 3 mm dia x 2 m long218 Rope sling, 4 mm dia x 2 m long219 Rope sling, 5 mm dia x 2 m long2	9 O ring for pad anchor and hooks	6
11 self locking "mole grip" with 25 mm eye112 self adhezive pad anchor1413 Suction anchor, single pad214 Shock cord 10 mm, 1m with steel hook115 Shock cord 10 mm, 2m with hook116 self locking forceps117 Rope sling, 3 mm dia x 2 m long218 Rope sling, 4 mm dia x 2 m long219 Rope sling, 5 mm dia x 2 m long2	10 light weight spring grip - small	1
12 self adhezive pad anchor1413 Suction anchor, single pad214 Shock cord 10 mm, 1m with steel hook115 Shock cord 10 mm, 2m with hook116 self locking forceps117 Rope sling, 3 mm dia x 2 m long218 Rope sling, 4 mm dia x 2 m long219 Rope sling, 5 mm dia x 2 m long2	II light weight spring grip	1
13 Suction anchor, single pad       2         14 Shock cord 10 mm, 1m with steel hook       1         15 Shock cord 10 mm, 2m with hook       1         16 self locking forceps       1         17 Rope sling, 3 mm dia x 2 m long       2         18 Rope sling, 4 mm dia x 2 m long       2         19 Rope sling, 5 mm dia x 2 m long       2	II self locking "mole grip" with 25 mm eye	1
14 Shock cord 10 mm, 1m with steel hook       1         15 Shock cord 10 mm, 2m with hook       1         16 self locking forceps       1         17 Rope sling, 3 mm dia x 2 m long       2         18 Rope sling, 4 mm dia x 2 m long       2         19 Rope sling, 5 mm dia x 2 m long       2	12 self adhezive pad anchor	14
15 Shock cord 10 mm, 2m with hook       1         16 self locking forceps       1         17 Rope sling, 3 mm dia x 2 m long       2         18 Rope sling, 4 mm dia x 2 m long       2         19 Rope sling, 5 mm dia x 2 m long       2	13 Suction anchor, single pad	2
16 self locking forceps       1         17 Rope sling, 3 mm dia x 2 m long       2         18 Rope sling, 4 mm dia x 2 m long       2         19 Rope sling, 5 mm dia x 2 m long       2	14 Shock cord 10 mm, Im with steel hook	1
17 Rope sling, 3 mm dia x 2 m long       2         18 Rope sling, 4 mm dia x 2 m long       2         19 Rope sling, 5 mm dia x 2 m long       2	15 Shock cord 10 mm, 2m with hook	1
18 Rope sling, 4 mm dia x 2 m long       2         19 Rope sling, 5 mm dia x 2 m long       2	16 self locking forceps	1
19 Rope sling, 5 mm dia x 2 m long 2	17 Rope sling, 3 mm dia x 2 m long	2
	18 Rope sling, 4 mm dia x 2 m long	2
20 Wire sling, 1,5 mm dia x 2 m long	19 Rope sling, 5 mm dia x 2 m long	2
	20 Wire sling, 1,5 mm dia x 2 m long	I



21 Wire sling, 2 mm dia x 2 m long	I
22 Wire sling, 3 mm dia x 2 m long	I
23 Shackle D shape 13 mm gate	1
24 Bow shackle 13 mm	1
25 Long shackle D shape 13 mm gate	1
26 Twisted shackle D shape 13 mm gate	I
27 Karabiner II mm gate	2
28 Karabiner II mm screwgate I2mm	2
29 Anchor for 8 mm hole	2
30 Piton, large chisel point	2
31 Karabiner (Alloy) 18 mm screwgate 25kN	3
32 Karabiner (Alloy) 20 mm screwgate 25kN	2
33 Karabiner (Alloy) 23 mm quarterturngate 24kN	1
34 Cantilever clamp	1
35 D-Clamp with 25 mm eye	1
36 Stoppers wire sling	2
37 Stoppers rope sling	3
38 Screw eye self tap	10
39 Doorstop	4
40 Extension rod stainless steel 400 mm	4
41 Telescopic arm	1
42 Hook, 25 mm with mouth and spring loaded gate	I
43 Hook, 50 mm with mouth and spring loaded gate	1
44 Holder for hooks	I
45 Triple barb hook	2
46 Hook mount for telescopic pole	I
47 Pulley with jammer cleat	1
48 self relieving snatch block	2
49 Splitter ball	2
50 Snatch block	I
51 Tactical search mirror	1
52 Mirror I40 mm	1
53 Manual entry kit	I
54 Multifunction pocket tool kit	I
55 LED head AA cell torch	1
56 Backpack	I



# **Comprehensive Hook and Line Kit**

Art.Nr. 0200700



# **Technical Specification**

2 Reels	diameter 280 mm
2 Lines fitted with Snap Hook	diameter 5mm 100m / diameter 6mm 100m

# 2 Rope Pulling Handles

material	aluminium
weight	normal 70g / small 52g
size	normal II89 $\times$ 17 mm / small 95 $\times$ 17 mm



	•
LxWxD	77 x 45 x 30 mm
sheave diameter	30mm
line diameter	up to 13mm







### 10 Hooks

I small single plain	36g
I medium single plain	43g
2 medium double plain	55g
2 large single plain	73g
I 25mm mouth and spring loaded gate	75g
I 50mm mouth and spring loaded gate	110g
I triple barb hook	13g
I small triple barb hook	I Og

### **Hook Accessories**

holder for hooks	20g
hook mount for telescopic pole	20g

# 2 Eyes

diameter	25mm
weight	45g

# 6 Rope Slings

2 rope slings 3mm	2m
2 rope slings 4mm	2m
2 rope slings 5mm	2m



# 3 Wire Slings

rope sling 1,5mm	2m	
rope sling 2mm	2m	
rope sling 3mm	2m	



## 3 Pitons

large spear point	66g
medium chisel point	62g
small	57g

### 2 Anchors for 8mm Hole

### **Suction Pad**

double	581g	



# 2 Cantilever Clamps

•	
Length	220mm
Maximum jaw opening	50mm
Weight	770g
Maximum working load	50kg



# 2 Lightweight Spring Grips

Max jaw opening	35mm
Grip length	I3cm
Weight	80g
Wire cable length	40cm



# **Self Locking Forceps**

Length	175mm
Jaw length	35mm
Elongation	up to 200% under tension

# Self Locking Mole Grip with Eye

Eye diameter	25mm	
12 Self Tap Screw Eyes		000000
5 x 30 mm (6x)	17g	TTTTTT
4 x 30 mm (6x)	8g	999999

# Adjustable Clamp System

## 9 Karabiners

gate 8mm (Ix)	35kN
screwgate 7mm (Ix)	
gate I2mm (Ix)	60kN
screwgate I2mm (Ix)	
aluminium screwgate 19mm (2x)	20kN
aluminium screwgate 23mm (2x)	22kN
aluminium quarterturngate 23mm (Ix)	22kN

# 4 Schackles

D shape	I3mm	
Bow	I3mm	000
Long	I3mm	
Twisted	I3mm	cylenia cylenia cylenia - 4 -

### **Multifunction Pocket Toolkit**



## 2 Stainless Steel Extension Rods

normal	400mm
long	800mm

27

## **Belt Sling**

weight	175g



# **Jammer Cleat Pulley**

LxWxD	95 x 60 x 33 mm
sheave diameter	30mm
weight	165g
maximum load in lock	60kg
maximum load	1350kg



## 4 Self-Relieving Snatch Blocks

LxWxD	140 x 45 x 30 mm
sheave diameter	30mm
weight	220g
line diameter	4-6kg
maximum load	300kg



# 2 Splitter Balls for Self-Relieving Snatch Block

diameter	80mm	
weight	30g	
maximum load	up to 25kg	

#### 10 Self Adhesive Anchor Pads



# 4 Doorstops



Doorway Anchor 70-I I 0cm with Eyes

Telescopic Pole

Sledge



**Plastic Case with Foam Cutout** 

Bag for Reels with Main Rope

Line Branch

**Security Mirror** 

Comprehensive H & L Kit weight: 23 kg



# **EOD** Crimping tool

Art.Nr. 0200800



# **Features**

Designed for the needs of EOD operators

High quality aluminum

Easy to operate

Robust and reliable

# **EOD** Emergency kit

Art.Nr. 0200900



A hook and line kit designed for initial emergeny operations by special forces. The kit comes in a rigid rucksack made of cordura.



# Water disrupter set

Art.Nr. 0201100

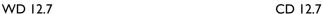


WD in transport case. WD barrels' base is transported separately (in a linen transport bag).

# Operating instruction

The water disrupter (hereinafter referred to as WD and CD) is used for safe and efficient disruption of fuses on bombs and grenades, diversion devices, suspicious objects of unknown content with no detonation as well as for all types of locks on steel and wooden doors. The high pressure water jet, steel bolts or clay particles fired from the barrel by the explosion of electrically ignited 12.7 cartridge are used as a destruction device.









# Kit consists of the following parts (Picture 2):

- I. Barrel with cartridge carrier -WD 12.7
- 2. Barrel with cartridge carrier CD 12.7 (equipped with a gas break)
- 3.WD 12.7 gas break
- 4. Aluminum winding device with 100 m cable for electric ignition
- 5. Set of bolts (3 pcs)
- 6. Plastic plugs for water (20 pcs)
- 7. Aluminum base
- 8. Extractor and cleaning kit
- 9. Plastic bottle (0.5 I) for water
- 10. Vaseline for lubrication
- 11. Transport case or linen bag



# Base Technical Data

Dimensions of the base	length 800 mm / width 210 mm / height 140 mm
Operational dimensions of the base	length 800 mm / width 1.000 mm / height till 800 mm
Weight of the base	9 kg

# Description

WD 12.7 and CD 12.7 consist of the universal collapsible base used as the barrel carrier. The base consists of two adjustable floor limbs and two height adjustable limbs. The adjustable joints enable the disrupter to be precisely adjusted and directed to the targeted object. The base limbs are made of aluminum alloy and the other parts are made of stainless steel. All base parts are protected against corrosion and dulled against the light reflection.

Barrels of WD 12.7 and CD 12.7 are made of the high quality steel and protected against corrosion. The bottom part of the barrel is charged by 12.7 mm cartridge loaded by 17 g of black powder; wires for electrical ignition of the cartridge are put through the cap hole and the cap is screwed on the barrel. The plastic plug is inserted into the front part of WD 12.7 barrel, than 0.16 l of water is poured in it and then the barrel is closed with a plastic plug. For inserting the plastic plug a metal bar about 50 mm long is used, to which brushes can be fixed for purposes of cleaning. To the front part of CD 12.7 the lubricated cork is inserted and then the barrel is loaded by not more than 37.5 cm3 of clay (odeling clay). CD 12.7 can be loaded by a steel bolt instead of clay filling. The loaded (WD or CD) barrel is fixed to the base and after connecting two-wired cable the cartridge is ready for electrical ignition.

Steel bolts are used for disruption of mine-explosive devices, fuses on bombs and grenades etc.

# Using WD (Item 1) stick to the following procedure

- 1. Fix the WD 12.7 barrel to the base and fix it in the vertical position.
- 2. Unscrew the cartridge 12.7 nut from the bottom side of WD.
- 3. Push the first plug to the end of WD, so that plug is open to the front side of the barrel.
- 4. Put water into WD.
- 5. Close WD with another plug oriented by its bottom towards the carrier.
- 6. Check the waterproof condition.
- 7. Put the WD barrel into the horizontal position.
- 8. Install the gas break.
- 9. Put the cartridge to the carrier and fix it by the cap nut.
- 10. Connect the cable for ignition and insulate connections (with an insulating tape).
- 11.WD is ready for use.

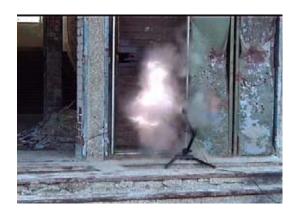
# Using CD (Item 2) stick to the following procedure

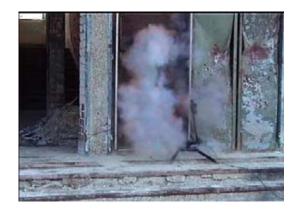
- 1. Fix the CD 12.7 barrel to the base and fix it in the horizontal position.
- 2. Unscrew the of cartridge 12.7 nut from the bottom side of CD.
- 3. Put the cartridge on the carrier and fix it with the cap nut.
- 4. If necessary CD can be loaded with modeling clay or bolt from the front side.
- 5. Connect the cable for ignition and insulate connections (with an insulating tape).
- 6. CD is ready for use.

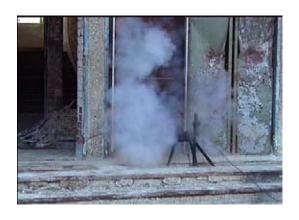
### **Notes**

- Perform each WD/CD ignition from a cover.
- Clean and lubricate WD/CD after each use.
- If possible use video link to monitor the WD/CD ignition so the state of the target can be checked

# Photos of use and efficiency















# Steel bolts SB01, SB02, SB03

Art.Nr. 0201104/05/06



# **Technical Specification**

The steel bolts SB01, SB02 and SB03 are used for disruption of the improvised explosive devices IEED), fuses or artillery and mortar ammunition, as well as locks and padlocks on wooden and steel doors.

Bolt type	Weight	Length	Dia.	Shape	Largest dim.
SBOI	750 g	137 mm	27 mm	Cutter 90	48 mm
SB02	575 g	150 mm	27 mm	Cutter 75	30 mm
SB03	590 g	140 mm	27 mm	Flach	30 mm

The steel bolts are made of tempered tool steel. Different points are used according to the object which is to be disrupted. The bolts are launched from the CR-02 barrel, fixed on the universal adjustable mount of the water disrupter. The pressure is provided by the electrically-fired cartridge NVR-29 which is offered In three different power grades:

- LP 15g of black powder
- MP 20 g of black powder
- HP 30 g of black powder



# **Electronic blasting machine EDK-700**

Art.Nr. 0201300



# **Technical Specification**

The electronic blasting machine EBK 700 has been designed for activating electro detonator caps, that are used in minefields, at destruction of buildings and bridges, in stone – pits, and in all other scenarios where electrical activation is used. Up to 120 activations

- ignition voltage 400 VDC
- filling time of capacitor up to 6sec
- capacitor capacity  $100\ \mu F$
- 120 activations max.
- battery voltage I0VDC
- type of battery Motorola NTN 5521
- voltage of battery 9,2 VDC min.
- battery capacity 1,0 Ah
- temperature range  $20^{\circ}$ C to  $+70^{\circ}$ C
- ABS plastic housing
- max. net resistance 400 Ohms for detonator caps min. ignition power IA
- max. no of caps for serial net 180 pieces



- max. no. of caps for parallel net 3 pieces
- connectors are short-circuited until the moment of activating
- controlled activating of detonator caps
- dimensions:  $180 \times 65 \times 45 \text{ mm}$
- weight : 520g







## **EOD** - tripod

Art.Nr. 0201500





### **Technical Specification**

The two section telescopic legs can be locked to any one of four heights enabling it to be used in areas of restricted height or on sloping ground. The head is fitted with leg stops that prevent the tripod from collapsing under load, as well as eyes and a karabiner for attaching lifting tackle and for tethering. The self-levelling feet may be pegged to the ground for extra stability.

The tripod is supplied with a set of anchoring pegs in a reinforced canvas carrying case.

Overall height with max. extension	2.770 mm
Working height with max. extension	2.300 mm
Pitch circle diameter with max. extension	2.200 mm
Overall height with min. extension	1.500 mm
Working height with min. extension	1.250 mm
Pitch circle diameter with min. extension:	1.300 mm
Load capacity with feed anchored	800 kg
Foot diameter	120 mm
Min. overall length for storage	1.550 mm
Weight	35 kg

Supplied with three carabiner (max. load 2.600 kg), one single and one double pulley, I5m rope (max. load 5.000 kg), six steel anchor pegs, length 400 mm, diameter I4 mm and hammer (2 kg) in a separate cordura bag.

The reinforced semi-rigid carrying case, overall dimensions: 1.700 mm x 230 mm x 230 mm.



### Search tool set

Art.Nr. 0201600



### Content

Lether hand gloves

Nylon cord 3 mm/150 m

Insulation tape

Steel measuring tape 3m

Retractable knife + spare blades

Linoleum knife,

Scissors (260 mm)

Padsaw, with various blades

Hacksaw with blades (5 + 5)

Tack extractor

Hammer 500 g

Club hammer 2000 g

Cold chisel, 250 mm

Wrecking bar, 500 mm

Cutter, capacity - 0,9 mm mild steel

Cutter, capacity - 1,2 mm mild steel

Bolt cutter, 600 mm, 8 mm HT steel

Screwdriver, cross head, 60 mm

Screwdriver, cross head, 80 mm



Screwdriver, cross head, 100 mm

Screwdriver, cross head, 150 mm

Screwdriver, cross head, 200 mm

Screwdriver, flat head, 100 mm

Screwdriver, flat head, 150 mm

Screwdriver, flat head, 200 mm

Screwdriver, flat head, 250 mm

Wrench set, hexagonal, imperial

Wrench set, hexagonal, metric

Wrench, adjustable, 150 mm

Wrench, adjustable, 300 mm

Wrench, strap, 50 - 300 mm dia

Pliers, adjustable vice grip, 250 mm

Pliers, combination, 180 mm

Pliers, long nosed, 200 mm

Pliers, side cutting, 150 mm

Pliers, slip joint, 240 mm

Seizers 150 mm

**Tweezers** 

Centre punch

Releasing fluid

Lamp 14,4V

1/2" socket set 10 - 32 mm

1/2" socket set 7/16 - 1 1/8"

Cordless drill 1/2", rechargeable battery (x2), battery charger

Drill bit, HSSE, 5 mm (x2)

Drill bit, HSSE, 10 mm (x2)

Drill bit, HSSE, 12 mm (x2)

Drill bit for wood, 10 mm

Drill bit for wood, 14 mm

Drill bit for wood, 20 mm

Drill bit, masonry, 10 x 400 mm

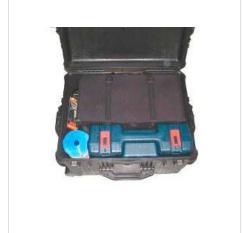
Drill bit, masonry, 12 x 400 mm

Cordura bag

Peli lock

Waterproof carrying case 63 x49 x 35 cm







## **Demolition Kit**

Art.Nr. 0202100





### Technical features

Blasting Machines	KSP 400		KSP 700
Ignition voltage	DC 380V		DC 700V
Filling time of capacitor		up to 6 s.	
Capacitor capacity	200mF		50mF
max. no. of activations		120	
Battery voltage		DC I0V	
Type of battery		MOTOROLA N	TN 5521
min. voltage of battery		DC 9,2V	
Battery capacity		I,IAh	
Temperature range from		-20oC to +70oC	
Case		ABS plastic	
max. net resist. for min. ignition power IA	300W		600W
max. No EDK for serial net		180 pieces	
max. No EDK for parallel net		3 pieces	
Connectors are short-circuited until the moment of activating			

Controlled activating of EDK





### Battery Charger for Blasting Machines

Charging time	60Min
AC input	220V
Dimension	60 x 200 x 85 mm
Weight	1200g



#### **VICTORINOX Swiss Tool**

\M/oight	2145
Weight	314g

A Multifunction Pocket Toolkit is made of first class stainless steel. It consists of: pliers / screwdriver 2, 3, 5 & 7,5mm, / wire cutter for wire up to a hardness of 40 HRc / cap lifter / normal blade / serrated blade / metal file / metal saw / wood saw / reamer and punch / Philips screwdriver I+2 / chisel/scrapper / strong crate opener / wire bender / wire stripper / wire scraper / can opener / 230mm ruller / 9 inches ruller / electrical crimper and lanyard hole



### Box for Electric Cap

Schachtel aus schwarzem Cordura mit Plastikeinlage für 15 Zündkapseln		
Dimension	40 x 180 x 90 mm	
Weight	125 g	



### Cap Box

Plastic box for 12 cap's	
Dimension	20 x 80x 60 mm
Weight	80 g



### Digital Galvanometer

Black kordura box	
Weight	285g
Dimension	70x130x35
Resistance	200Ohm - 20MOhm
VDC	200mV - 600V
VAC	200V - 600V
ADC	200mA - 10A

Double Firung Wire

Length	500 m
Resistance	30Ohm + 30Ohm

### Cap Crimper



Aluminium/Steel		
Protection tube in case unwanted detonating of crimping cap		
Six-edged shape	5 mm	
Weight	510 g	
Length	220 mm	

### Carrying Bag

black Cordura	
Dimension	390 x 250 x 170 mm
Weight	1500 g



## **HDT** tool set

Art.Nr. 0203100

Item         Description         Qty           1         Pliers – Vicegrip, Curved jaw         1           2         Pliers – Needle Nose         1           3         Measuring Tape, 3 m         1           4         Tweezers – Plastic         1           5         Metal Tweezers – Set 4 pcs         1           6         Mirror dental         1           7         Inspection Mirror 30 mm Dia         1           8         Telescopic Mirror 60 mm Dia         1           9         Probe Metal – set 3 pcs         1           10         Mini Maglite AA         1           11         Maglite Fiber Optic Wand         1           12         Doorstop – plastic         2           13         Scalpel with Spare Blades         1           14         LED Headlamp         1           15         Universal Clamping Pliers         1           16         Clamp – Self Locking, Plastic         2           17         Line - Lo-stretch, I,7 mm / 50 m , 130 daN         1           18         Reel for Line         1           19         Simple Hook         2           20         Screwdriver Set – Jewellers         1	y
2       Pliers – Needle Nose       I         3       Measuring Tape, 3 m       I         4       Tweezers – Plastic       I         5       Metal Tweezers – Set 4 pcs       I         6       Mirror dental       I         7       Inspection Mirror 30 mm Dia       I         8       Telescopic Mirror 60 mm Dia       I         9       Probe Metal – set 3 pcs       I         10       Mini Maglite AA       I         11       Maglite Fiber Optic Wand       I         12       Doorstop – plastic       2         13       Scalpel with Spare Blades       I         14       LED Headlamp       I         15       Universal Clamping Pliers       I         16       Clamp – Self Locking, Plastic       2         17       Line - Lo-stretch, I,7 mm / 50 m, I30 daN       I         18       Reel for Line       I         19       Simple Hook       2         20       Screwdriver Set – Jewellers       I         21       Wrench Adjustable I50       I	
3       Measuring Tape, 3 m       1         4       Tweezers – Plastic       1         5       Metal Tweezers – Set 4 pcs       1         6       Mirror dental       1         7       Inspection Mirror 30 mm Dia       1         8       Telescopic Mirror 60 mm Dia       1         9       Probe Metal – set 3 pcs       1         10       Mini Maglite AA       1         11       Maglite Fiber Optic Wand       1         12       Doorstop – plastic       2         13       Scalpel with Spare Blades       1         14       LED Headlamp       1         15       Universal Clamping Pliers       1         16       Clamp – Self Locking, Plastic       2         17       Line - Lo-stretch, 1,7 mm / 50 m , 130 daN       1         18       Reel for Line       1         19       Simple Hook       2         20       Screwdriver Set – Jewellers       1         21       Wrench Adjustable 150       1	
4       Tweezers – Plastic       I         5       Metal Tweezers – Set 4 pcs       I         6       Mirror dental       I         7       Inspection Mirror 30 mm Dia       I         8       Telescopic Mirror 60 mm Dia       I         9       Probe Metal – set 3 pcs       I         10       Mini Maglite AA       I         11       Maglite Fiber Optic Wand       I         12       Doorstop – plastic       2         13       Scalpel with Spare Blades       I         14       LED Headlamp       I         15       Universal Clamping Pliers       I         16       Clamp – Self Locking, Plastic       2         17       Line - Lo-stretch, I,7 mm / 50 m , I30 daN       I         18       Reel for Line       I         19       Simple Hook       2         20       Screwdriver Set – Jewellers       I         21       Wrench Adjustable I 50       I	
5       Metal Tweezers – Set 4 pcs       1         6       Mirror dental       1         7       Inspection Mirror 30 mm Dia       1         8       Telescopic Mirror 60 mm Dia       1         9       Probe Metal – set 3 pcs       1         10       Mini Maglite AA       1         11       Maglite Fiber Optic Wand       1         12       Doorstop – plastic       2         13       Scalpel with Spare Blades       1         14       LED Headlamp       1         15       Universal Clamping Pliers       1         16       Clamp – Self Locking, Plastic       2         17       Line - Lo-stretch, I,7 mm / 50 m , I30 daN       1         18       Reel for Line       1         19       Simple Hook       2         20       Screwdriver Set – Jewellers       1         21       Wrench Adjustable I 50       1	
6       Mirror dental       I         7       Inspection Mirror 30 mm Dia       I         8       Telescopic Mirror 60 mm Dia       I         9       Probe Metal – set 3 pcs       I         10       Mini Maglite AA       I         11       Maglite Fiber Optic Wand       I         12       Doorstop – plastic       2         13       Scalpel with Spare Blades       I         14       LED Headlamp       I         15       Universal Clamping Pliers       I         16       Clamp – Self Locking, Plastic       2         17       Line - Lo-stretch, I,7 mm / 50 m, I30 daN       I         18       Reel for Line       I         19       Simple Hook       2         20       Screwdriver Set – Jewellers       I         21       Wrench Adjustable I50       I	
7       Inspection Mirror 30 mm Dia       1         8       Telescopic Mirror 60 mm Dia       1         9       Probe Metal – set 3 pcs       1         10       Mini Maglite AA       1         11       Maglite Fiber Optic Wand       1         12       Doorstop – plastic       2         13       Scalpel with Spare Blades       1         14       LED Headlamp       1         15       Universal Clamping Pliers       1         16       Clamp – Self Locking, Plastic       2         17       Line - Lo-stretch, I,7 mm / 50 m, I30 daN       1         18       Reel for Line       1         19       Simple Hook       2         20       Screwdriver Set – Jewellers       1         21       Wrench Adjustable I50       1	
8       Telescopic Mirror 60 mm Dia       1         9       Probe Metal – set 3 pcs       1         10       Mini Maglite AA       1         11       Maglite Fiber Optic Wand       1         12       Doorstop – plastic       2         13       Scalpel with Spare Blades       1         14       LED Headlamp       1         15       Universal Clamping Pliers       1         16       Clamp – Self Locking, Plastic       2         17       Line - Lo-stretch, I,7 mm / 50 m , I30 daN       1         18       Reel for Line       1         19       Simple Hook       2         20       Screwdriver Set – Jewellers       1         21       Wrench Adjustable I50       1	
9       Probe Metal – set 3 pcs       1         10       Mini Maglite AA       1         11       Maglite Fiber Optic Wand       1         12       Doorstop – plastic       2         13       Scalpel with Spare Blades       1         14       LED Headlamp       1         15       Universal Clamping Pliers       1         16       Clamp – Self Locking, Plastic       2         17       Line - Lo-stretch, I,7 mm / 50 m, I30 daN       I         18       Reel for Line       I         19       Simple Hook       2         20       Screwdriver Set – Jewellers       I         21       Wrench Adjustable I50       I	
10       Mini Maglite AA       1         11       Maglite Fiber Optic Wand       1         12       Doorstop – plastic       2         13       Scalpel with Spare Blades       1         14       LED Headlamp       1         15       Universal Clamping Pliers       1         16       Clamp – Self Locking, Plastic       2         17       Line - Lo-stretch, I,7 mm / 50 m, I 30 daN       1         18       Reel for Line       1         19       Simple Hook       2         20       Screwdriver Set – Jewellers       1         21       Wrench Adjustable I50       1	
11       Maglite Fiber Optic Wand       1         12       Doorstop – plastic       2         13       Scalpel with Spare Blades       1         14       LED Headlamp       1         15       Universal Clamping Pliers       1         16       Clamp – Self Locking, Plastic       2         17       Line - Lo-stretch, I,7 mm / 50 m, I 30 daN       1         18       Reel for Line       1         19       Simple Hook       2         20       Screwdriver Set – Jewellers       1         21       Wrench Adjustable 150       1	
12       Doorstop – plastic       2         13       Scalpel with Spare Blades       1         14       LED Headlamp       1         15       Universal Clamping Pliers       1         16       Clamp – Self Locking, Plastic       2         17       Line - Lo-stretch, 1,7 mm / 50 m, 130 daN       1         18       Reel for Line       1         19       Simple Hook       2         20       Screwdriver Set – Jewellers       1         21       Wrench Adjustable 150       1	
13       Scalpel with Spare Blades       1         14       LED Headlamp       1         15       Universal Clamping Pliers       1         16       Clamp – Self Locking, Plastic       2         17       Line - Lo-stretch, I,7 mm / 50 m, I30 daN       1         18       Reel for Line       1         19       Simple Hook       2         20       Screwdriver Set – Jewellers       1         21       Wrench Adjustable 150       1	
14       LED Headlamp       1         15       Universal Clamping Pliers       1         16       Clamp – Self Locking, Plastic       2         17       Line - Lo-stretch, I,7 mm / 50 m, I30 daN       1         18       Reel for Line       1         19       Simple Hook       2         20       Screwdriver Set – Jewellers       1         21       Wrench Adjustable 150       1	
15       Universal Clamping Pliers       1         16       Clamp – Self Locking, Plastic       2         17       Line - Lo-stretch, I,7 mm / 50 m, I30 daN       I         18       Reel for Line       I         19       Simple Hook       2         20       Screwdriver Set – Jewellers       I         21       Wrench Adjustable I50       I	
16       Clamp – Self Locking, Plastic       2         17       Line - Lo-stretch, I,7 mm / 50 m, I30 daN       I         18       Reel for Line       I         19       Simple Hook       2         20       Screwdriver Set – Jewellers       I         21       Wrench Adjustable I50       I	
17       Line - Lo-stretch, I,7 mm / 50 m, I30 daN       I         18       Reel for Line       I         19       Simple Hook       2         20       Screwdriver Set – Jewellers       I         21       Wrench Adjustable 150       I	
18       Reel for Line       1         19       Simple Hook       2         20       Screwdriver Set – Jewellers       1         21       Wrench Adjustable 150       1	
19         Simple Hook         2           20         Screwdriver Set – Jewellers         1           21         Wrench Adjustable 150         1	
20 Screwdriver Set – Jewellers I 21 Wrench Adjustable 150 I	
21 Wrench Adjustable 150	
·	
22 Wrench Adjustable 200	
,	
23 Scissors I	
24 Wood Chisel – 20 x 200	
25 Seizers I50 I	
26 Seizers I20 I	
27 Locksmiths' Hammers LSI super – 200 g	
28 Wire Strippers / Cutters	
29 Driver Bit Combo – complete	
30 Screwdriver Set – 5 pcs	
31 Pliers – Long nose Wiring Type Cutter I	
32 Pliers – Side Cuter 115	
33 Pliers – Diagonal Cutter 160	
34 Pliers Needle Nose – Large 160	
35 Pliers Needle Nose – Small 115	
36 Pliers – Slip Joint I	
37 Telescopic Magnet I	
38 Cable ties – Plastic, 2 sizes	
39 Safety-pin – Big Head 20	
40 Black Storage Case I	



## **Basic tool set**

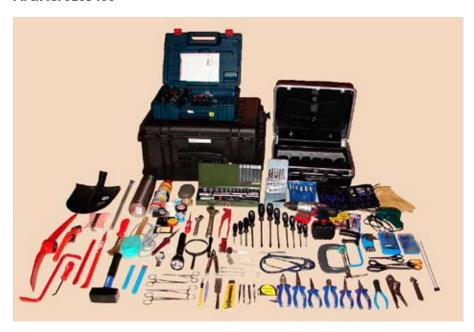
Art.Nr. 0203200

ltem	Description	Qty
ıcem	·	Qty
'	Socket set and bits	ı
2	Hexagon spanner set metric	I
3	Hexagon spanner set imperial	I
4	Spanner set metric	I
5	Spanner set imperial	1
6	Vehicle door trim/panel removing tool	1
7	Pliers, combination, 180mm	1
8	Insulated telescopic search mirror pole 63cm	1
9	65mm mirror to fit telescopic pole	1
10	Dental mirror 22mm	1
11	Adjustable spanner 300mm	1
12	Wrenching bar 340 x 45mm	1
13	Safety torch, D zone, 2 x D cell (Maglite 2D)	1
14	Screwdriver, flat head, 259mm x 5,5mm	T
15	Screwdriver, flat head, 250mm x 8mm	I
16	Tool carrying case	T



# **EOD-Response Tool Kit R.S.P.**

Art.No. 0203400



ltem	Description	Qty
1	Doctors Stethoscope	1
2	B.P. Handle 12,7 cms (5") with B.P. Blade Set	I
3	Scissors 15,24 cms (6"), 17,78 cms (7"), 20,32 cms (8")	3
4	Dental Mirrors 20 and 30 mm dia	2
5	Scalpal 12,70 cms (5") with blade set (9 Pc's)	I
6	Arty Forceps 15,24 cms (6"), 17,78 cms (7"), 20,32 cms (8"), 22,86 cms (9")	4
7	Maglite with two pencil cells	I
8	Maglite medium with two cells	I
9	Hammer sledge and (1,5 Kg)	I
10	Pipe wrench 25,4 cms (10")	ı
П	Hand vice Grip 15,24 cms (6")	I
12	Magnifying Glass (10 cm)	I
13	Nipper cutter	I
14	Tin cutter	I
15	Nose Plier	I
16	Knife 80 mm Blade	I
17	C Clamp 10,16 cms (4")	I
18	Spanner adjustable 12-19 mm	I
19	Spanner adjustable 30 mm	I
20	Hack Saw 15,24 cms (6") with Blade set	I
21	Screw Driver set consisting of: $5 \times crosspoint$ and $6 \times flat$	I
22	Bosch 14,4 V Cordless Drill with HSS drill-bit set 1 - 10 mm, 6 Pc's wood-drill	I



23	32 bit set	I
24	Spanner 10 piece metric set	1
25	Spanner 10 piece imperial set	1
26	Weller 40 W Soldering iron, with soldering paste and solder wire 50 gms	1
27	Sponge holder 25,4 cms (10")	1
28	Can opener 15,24 cms (6")	I
29	Tape yellow (TESSA)	I
30	Tape black (TESSA)	I
31	Tape paper	ı
32	Punch	I
33	Cold chisel 15,24 cms (6") 15 mm cutting edge	1
34	Cold chisel 20 cms (8") 22 mm cutting edge	I
35	Screw Driver set (watch maker)	I
36	Screw Driver alignment cplt.	I
37	Super glue adhesive (loctite and super glue)	2
38	Plier cutter/grip longpoint nose	I
39	Plier cutter/grip combination	I
40	Plier flat jaw	I
41	Plier round jaw	I
42	Cutter side 150 mm	I
43	Cutter side 120 mm	1
44	Fish line with triple barbless hook	I
45	Suit case for Tool's	1
46	Tweesers 4 pc's cplt	I
47	Probe straight & right angle	I
48	Wire Brush	I
49	Wrist watch (Seiko quartz with stopwatch)	I
50	Ladder folding (Telestep 77 - 330 cm) in black bag	I
51	Swiss Army knife (Swisstool supertool)	I
52	Tape measuring 5 m	I
53	Non metallic probe (Plastic knitting needles)	2
54	Water bottle, Cover - Glass	I
55	Soap case	I
56	Hand gloves	I
57	Fire extinguisher, 1000 g	1
58	Bar lever spike & cranked chisel ends 445 mm	I
59	Bar lever cranked form & wedge ends 260 mm	l
60	Square drive socket set (metric) (and imperial - optional)	I
61	Pick 560 mm head (2.000 g )	1
62	Pry bar (small and large)	2
63	Shovel round nose	I
64	Thermal cutter	I
65	Waterproof case 63 x49 x 35 cm	1



### Bomb blanket 570m/s 150 x 150cm

Art.No. 0203500



### **Technical Specification:**

The bomb blanket is designed to protect property and personnel from the blast and fragmentation occurring when an IED is set off. It may also be used as a ballistic blanket in certain vehicle applications. The blanket itself is manufactured from a Nylon outer cover, which offers a water proof protective layer to the Aramid layers inside.

- I. Please seek advice from qualified EOD operators before using this blanket. Each situation will dictate different procedures to be used.
- 2. Use the blanket as a shield when dealing with any IED. Special carrying straps and handles are designed so that the blanket can be held as a protective cover to shield the operator from any suspicious object.
- 3. Place the blanket over the object, trying to ensure that the object is as close to the centre of the blanket as possible. Should the situation dictate it the more blankets may be placed on top of the original to offer more protection.
- 4. Await the arrival of EOD operators, once the blanket has been placed in position. Attempts to remove a bomb blanket should only be carried out by trained EOD operators.
- 5. Once removed the Bomb Blanket can be put back in its carrying bag for further use.



#### General maintenance

General cleaning of the outside cover should be done with warm soapy water. Most general household washing up liquids will be sufficient for cleaning. Ensure that the cover is fully dried before placing the bomb blanket back in its carrying bag.

Should the outer cover be damaged in any way the bomb blanket will not work effectively and should be either destroyed or returned to the manufacture for recovering and recertification.

Under normal operating conditions our blankets will have a shelf life of 5 years. The warranty on the ballistic performance is set by materials within the blanket itself and this is currently 5 years from date of manufacture.

Weight blanket 12kg

V50 = 570m/s according to STANAG 2920

49

## **Brass Cap Crimper, titanium**

Art.No. 020440





### **Features**

Hi-Strength Aircraft Quality Aluminum

Dual crimp

Non magnetic

Non spark

The Mark 6 Dual Cap Crimper is the only type in the market that offers a dual crimp and a non-magnetic, non-spark environment. The Crimper also has a powder punch and fuse cutter that gives clean accurate cuts.



## Flares to destroy explosives

Art.No. 0204500



Non-explode, non-usable, usable time off contact free system for quick and efficient disposal of all kinds of ammunition and explosive products for civil and military specialists, in mine fields. combat and training areas.

### Holow charge penetrators

KP33 (Art.No. 0204501) KP37 (Art.No. 0204502)

Destroying structure of ammunition by holow charge (explosive mass 23 and 50 grams – TNT, HMX, RDX) In most cases it is not necessary to have visible contact with ammunitions and duds (system works under ground, snow, etc.)

### Holow charge cutters

LKR-100 (Art.No. 0204503) LKR-250 (Art.No. 0204504)

Destroying structure of ammunition by holow charge (linear dimensions are 100 and 250 mm - TNT, HMX, RDX). Visible contact with ammunitions and duds is recommended.







### **Buster charge**

T50 (Art.No. 0204505) T150 (Art.No. 0204506) T250 (Art.No. 0204507) T450 (Art.No. 0204508)

Destroying structure of ammunition by detonation (explosive mass 50, 150, 250 and 450 grams - TNT, HMX, RDYX). Visible contact with ammunitions and duds is recommended.

## Light fragmentation protection suit

Art.No. 0204700

### **Features**

**Protection** V50 = 520m/s according to STANAG 2920

Material Aramid PPTA, TWARON CT 709,

**Lifetime** Storage 10 years

Operation 7 years
Outer linen 2 years





## Inductive blasting machine 300V - SP-I 3/3 (not for EU)

Art.Nr. 0205000







### **Technical Specification**

electric source : inductor

ignition voltage DC 380 V

condenser capacity 100  $\mu F_{\!s}$  optional up to 330  $\mu F_{\!s}$ 

temperature range from -20°C to+ 70°C

max. net resistance 350  $\Omega$  (for EDK 0,8 A)

connectors are short circuited until the moment of activating

both hand activating

controlled activating of EDK

automatic net checking



## Handheld disruptor

Art.Nr. 0205400



### **Purpose**

The hand water disrupter HWD 01 is used for quick and safe opening of wooden and steel doors. The disrupter works on principle of the water jet from the tube propelled by the steel bolts.

### **Technical Data**

Length of the disruptor	560 mm
Weight of the disrupter	I2 kg
Cartridge	black powder load
Volume of water load	0,3 dm3
Ignition mode	electrical
Power supply	9V battery

### Description

The HWD 01 is made from steel and aluminium to provide the compactness and the solidity of the machine. It is protected against corrosion and dulled to reduce the light reflection.

The HWD 01 consists of a barrel which contains a tube, detonator and a break of the black powder gases. A handhold of the machine is adjusted to provide simple and safe detonating. A detonator contains two electric contacts connected through the cable line with the power supply - the 9 V battery. The ignition voltage is 400 V. In order to provide safe operation, the firing of the cartridge should be made by good squeeze on both switches. The break of gases insures the decrease of twitches.

The HWD 01 disrupter should be transported and kept in a specially designed bag. After the use the disrupter should be cleaned and lubricated.

Cartridges should be kept in their original container.



### **Rocket wrench RW-01**

Art.Nr. 0205500



### **Purpose**

The rocket wrench serves for remote disassembly of explosive ordnance fuses of unknown origin and condition as well as the »frozen» transport plugs. The device enables the EOD-operator to deal with hazardous ordnance from a safe distance, applying-power not always possible when using common mechanical tools.

### **Technical Specification**

Weight	8 kg
Material	steel
Load	two pcs propelling charges cal. 12,7 (used also for the Water Disrupter WD 12,7)

### Description

The device consist of the sturdy body with two opposite rocket engines. The jaws ate adjustable by means of large screws and can be used on a variety of ordnance fuses and transport plugs of different diameter. After the rocket wrench is set up and its jaws tightened, the rocket engines are charged with charges cal. 12.7 and remotely activated with a blasting machine from a safe distance. The twisting power of two rocket engines suffices to safely unscrew even heavily stuck-in fuses and plugs.

After the use the RW-I should be cleaned and lubricated.



## **Bomb Transport Trailer**

Art.Nr. 0205600



## **Technical Specification**

Container	Composite funnel
	-

Double wall

Gap between walls with spacers

**Loading and un-Loading** Manually using ropes, from a max. distance of up to 60m or

directly with the robot via the rear ramp

**Trailer** Two axles with overrun brakes

Height adjustable towing-bar

Exchangeable for: - ball-shaped coupling

- Tow-ring

**Dimensions:** Length 4.700mm

Width 2.000mm

Height 1.600mm (with inserted lifting mechanism)

Total weight 1.200kg

**Electricity** 12V





The EOD-Trailer is designed for safe transportation of devices suspected to contain explosives up to 5kg TNT.

The construction of the trailer allows the operation also in off-road areas e.g. in combination with a smaller towing vehicle like a jeep. Furthermore it can be used with a larger towing vehicle e.g. a truck.

The EOD trailer consists of a solid steel frame installed on two spring-mounted axles.

The frame carries a funnel-shaped container.

A lifting mechanism ("gallows") adjustable in height on the right hand side of the container allows loading and unloading of the container from a safe distance (up to 60mtrs.) using a rope. In addition, the loading and unloading can be done directly by an EOD manipulator using the built-in foldable rear ramp.

The exchangeable and height adjustable tow-bar allows the adaptation of the trailer to the towing vehicle which is used. As a standard two types of couplings are available: a towing ring and a ballshaped coupling.

The connector is a 7-pin plug as standard. An adapter 13-pin to 7-pin is included in the delivery.

A lockable metal container for storage and transport is mounted on the trailer to keep the necessary accessories and spare parts.







I Funnel



3 Heavy basket



2 Light basket



4 Lifting device



5 Metal container for accessories



### **6 Accessories**



- 6.1 Reel 28 cm with 80 m rope Ø 6 mm , Reel 28 cm with 60 m rope Ø 5 mm
- 6.2 Double pulley with karabiner for lifting device
- 6.3 2 kg ram
- 6.3 Pulley for handling with rope
- 6.4 Pulling handle
- 6.5 Ground anchor 30 and 50 cm
- 6.6 Pulley and karabiner (2x)
- 6.7 Rope for lifting device back side







8 Cover for funnel



9 Spare ropes for funnel



## **Bomb Transportation Basket BOB-I**

Art.Nr. 0205700



### **Technical Specification**

**Protection** for EOD-personnel against fragments

and explosion pressure waves while transporting e.g. Letter bombs or other IEDs (Improvised Explosive Devices)

Material Outer cloth: e.g. Cordura

Ballistic protection: Aramid fabric, s everal layers; Protection in accordance with STANAG 2920 (fragment 1,1g, velo-

city 450m/sec.

Protection up to 200g TNT

Carrying handles

Net insert in centred position

Weight Approx. 30 kg

**Dimensions** 50 cm diameter, 98 cm height

Electricity 12V



## **Telescopic ladder**

Art.No. 3400100





Very light, great comfort, up to 3.3m

### **Technical Specification**

Sometimes small weight and rapid mounting is very important. This telescopic ladder with standard steps width is the right choice for the quick and often use in difficult rooms and narrow environment.

11 steps – step width 40mm

Operation height max. 4.40m

Total length: 3.3m - 0.78m storage

Total width: 0,49m

Weight: 10kg

Adjustable on 10 steps

The ladder is approved according to ENI31 and meets European security standards



### **TUBE/Fuse cutter**

Art.Nr. 4200200

With its razor sharp blade this spring loaded cutter is ideal for all cutting applications including nonel tube, fuse and detonation cord (from 1/16 inches to 3/16 inches in diameter).

The blades are replaceable and a power punch can be found on one of the handles.

Materials	Hi-Strength Aircraft Quality Aluminum
Finish	Red Anodized
Length	6.8 inches (173mm)
Width	1.8 inches (46mm)
Thickness	0.35 inches (8.9mm)
Weight	3 oz. (0.09 kg) Powder Punch
Diameter	1/4 inches (6.5mm)
Length	2.2 inches (56mm)

## Bomb Disposal Vehicle, completely equipped

Art.Nr. 4400100





### The vehicle

 Mercedes-Benz Sprinter 416 (4x2) high roof 4250mm wheel base.

### Modifications and special adjustment:

- I.I. Automated brake system
- 1.2. Enhanced back axle stabilizer.
- 1.3. Off-road capability.
- 1.4. Enhanced accumulators.
- 1.5. Central accumulator switch.
- I.6. Heated windows.
- 1.7. Fog lights.
- I.8. Differential blocka
- 1.9. Hydraulic seat for the driver.
- 1.10. Air condition system.
- I.II. Light desk.

### Modification of the robot compartment

### I Air condition operation options

- 1.1 24V vehicles electric system.
- I.2 Generator or 220V external source.

### 2 Plating

- 2.1.1 The Floor
  - 2.1.1.1 The floor of the vehicle is assembled as follows:
  - 2.1.1.2 A 10-18 mm layer of plywood, coated with 2-3 mm layer of PVC.
  - 2.1.1.3 The entire upper PVC layer consists of one piece which will "climb" up all the walls to a height of about 50 mm



#### 2.1.2 Roof and Walls

- 2.1.2.1.1 The entire roof of the vehicle will be coated with the following layered structure:
- 2.1.2.1.2 First layer: 25-30 mm insulation.
- 2.1.2.1.3 Second layer: 4-6 mm plywood covered with "sky", including the rear and side doors, the internal wheel housing, including covering the door frames and corners and separate openings for the rear lights, so as to enable replacement of rear lights from inside the vehicle.
- 2.1.2.1.4 The roof sections (as few as possible) will be joined with metal strips.

#### 2.2 Seats

2.2.1 Rotating central chair

New upholstered vehicle chair including: chair cover, the possibility to move the chair backwards and forward, turning aside around the axis, adjustable back, adjustable and folding handles, safety belt.

#### 3 Equipment Storage Cabinets

- 3.1 Cabinets for storage of the equipment and tools. Their dimensions and location are according to the needs and parts to be stored.
- 3.2 The cabinets will be constructed of Aluminium 1.2 to 1.5 mm, and will be attached to the structure by a thrust or regular screw, at minimum intervals of every 12 cm.
- 3.3 The panels of the drawers 3 mm aluminium.
- 3.4 The drawers in the cabinet will move on a metal track. The movement of the tracks will be by means of ball bearings (not a smooth track), with a stop device at the forward end
- 3.5 Each drawer will be designed for a weight of at least 50 KGs.
- 3.6 Each cabinet or drawer will have an opening handle a lock and key. There will be a master key which will and locker all cabinet sand drawers in the vehicle.
- 3.7 The interiors of the cabinets and drawers will be covered with carpeting to prevent noise and friction.
- 3.8 The cabinets should be anchored to the vehicle according to the strength required by the type of the work, as well as in the case of a head-on collision.
- 3.9 The cabinets will be installed so that it will be possible to transfer them to another vehicle of the same type without difficulty (modular design).
- 3.10 All closets and devices shall be painted with grey electrostatic paint
- 3.11 The place intended for explosives will be an internal box made of aluminium 2 mm wide, with the external dimensions of 700X290X100 mm, with the following internal division:
- 3.12 At the place intended for the cartridge cases, there will be an internal box, similar to the one without the internal division.

#### List of Cabinets:

#### 3.12.1 Equipment cabinet.





### 3.12.2 The "explosives and cartridge" cabinet.



### 4 Back ramp:



4.1 The back ramp should be "folded type" (see pictures): Inclined ramp for climbing, folded for transportation (while folded, acting as a rear stop to the robot).

### 5 Robot device



5.1 Anchoring robot in a vehicle: fixing inside a vehicle is executed by means of a front stopping device or a robot and the rear device for fastening a robot.



### 5.1.1 Robot operating station:

Robot operating station will be on the operator table or on the left equipment cabinet.



**6.** Hanging devices For one (1) Bomb Disposal Division suit (on one of the rear doors).



7. Light bar 24V light bar, 2 rotators, 3 step cascade mirrors.



### Rear lights:

2 Hide -A – Way clear strobe tubesinstalled in the vehicles rear lights.

#### Perimeter lights:

2 strobe perimeter lights installed in the front grill.

#### Speakers:

2 Z100 speakers

#### 8. Siren Vicon 24V/100W



#### Vehicle refrigerator

A 40 litters, product of WAECO - GERMANY

"Coolmatic" RPD-40 or similar, according to the following data:

- Operational power 12/24V
- Temperature range at least -15 to +5°C
- Low voltage protection (against emptying the vehicle battery)
- The emphasis is on the refrigerator having compressor, etc, and not on the cool box.

### 9. Electricity

- 9.1 Two main switchs for 24V systems and for 12V systems will be installed, which will disconnect the systems. The switches will be accessible to the driver upon entering and exiting the vehicle.
- 9.2 Electric box contains one master fuse for 24V in the working compartment.
- 9.3 Electric box contains one master fuse for 220v in the working compartment.
- 9.4 Charging of a robot in a vehicle while parked: with the help of a "Hella" charging plug upon starting of a vehicle.
- 9.5 The system for charging the robot's batteries while the vehicle is in motion shall be installed in the vehicle. Such system shall use power supplied from the additional alternator 28V DC installed in the vehicle, while in motion. This will happen only after the alternator feeds the communication system batteries. When the communication system batteries are full, the feeding will be transferred to the charging of a robot.



- 9.6 "The energy channel" shall be installed on the two upper sides of the vehicle for all electric and communication installations and preparations for future reserve.
- 9.7 Main electric switches for entire the modelling will be installed in the driver's cabin.



- 7.8 Two sunken lights will be installed in the roof (large, round, inset model with a light of at least 21W), instead of the 2 original lights in the vehicle.
- 9.9 Two rectangular lights (halogen), to be installed inside the vehicle at both sides of the rear door, with switch near the door.
- 9.10 Multiple sockets shall be installed at both sides of every rear or side door and adjusted to 25A current. (Six multiple sockets).



- 9.11. Multiple sockets (220V) shall be installed at the operator table.
- 9.12 All push buttons and switches shall be of IP66 level.
- 9.13 The two main electric boards (12V and 24V), with half automatic fuses (S191 or similar).
- 9.14 At the beginning of each line there will be an automatic electrical fuse in the fuse box.

### **Additional Installations:**

- I. Radio system + antenna
- 2. Flash light charging devices +charging able Flash light.
- 3. Receiver tape recorder.
- 4. Intercommunication between driver's cabin and work compartment.
- 5. Extra electric accumulator the robot compartment.
- 6. First aid kit.
- 7. Digital camcorder with video equipment (monitor).
- 8. 1500 kg winch anchoring to the front bumper
- Water tank (on one of the rear doors), equipped with faucet for hand washing with place for soap and tower.
- 10. Generator: Honda EP3800CX
- Spherical towing hook.
- 12. Fire extinguisher.
- 13. Standard equipment.
  - 13.1. 4 spare 10L containers.
  - 13.2 Special purpose ladder.
  - 13.3 Megaphone.
  - 13.4. Shovel.



13.5.	40 m cable reel.
13.6.	Protective net.
13.7.	Protective net pegs.
13.8.	Hammer (1 kg).
13.9.	Crow bar.
13.10.	Chargeable drilling machine.
13.11.	Screw clamp.
13.12.	Electrician tool box.
13.13.	Set of lightening fixtures.
13.14.	Set of consumables (gloves, sack bags etc').



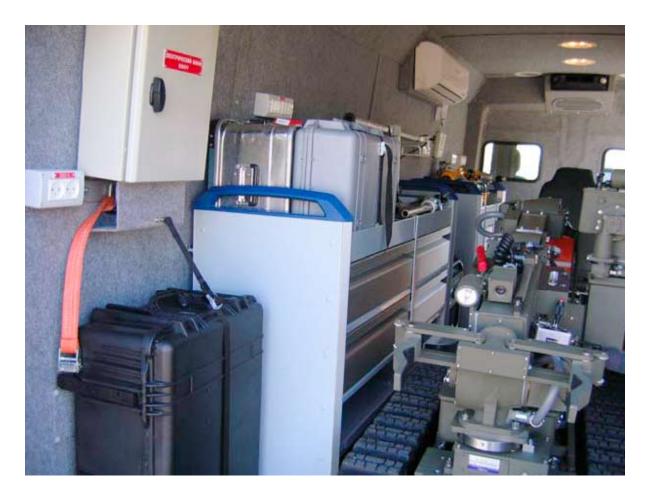
Additi	onal Equipment	Art.No.
I.	Bomb disposal suit, heavy	4700100
2.	Bomb blanket	0203500
3.	Fragment protection shield	4700200
4.	Telescopic manipulator	4700300
5.	Mine detector	3000100
6.	Bomb locator	3000200
7.	Portable stethoscope	4800100
8.	Mirror search kit	0202900
9.	Videoscope	1400100
10.	Hook and line kit	0200700
11.	Search tool kit	0201600
12.	Response kit for hazardous devices	0203100
13.	EOD response toolkit R.S.P.	0203400
14.	EOD tool set, non magnetic	1600100
15.	Demolition kit	0202100
16.	EOD tripod	0201500
17.	Bomb basket	0500600
18.	Water disrupter set complete	0201100
19.	Rocket wrench	0205500
20.	EOD marking set	0203603





### Option

Bomb trailer 0205600





## **EOD Bomb disposal suit heavy**

Art.Nr. 4700100



Currently in service in many countries throughout the world with Bomb Disposal Teams, the EOD Bomb Disposal Suit is a state-of-the-art garment specifically designed to give the highest level of protection with the maximum comfort and flexibility to the user. The ballistic levels and materials used in the various components of the EOD Bomb Disposal Suit are tested and evaluated to the full quality assurance standard laid down by the appropriate Government organizations.

The suit consists of the following separate items, which collectively make the complete garment.

Smock with attached collar

Hand protectors

Spine protector

Trousers – adjustable in length and width with quick release zips.

Overshoes

Throat blast plate

Chest blast plate

Groin blast plate

Helmet, with built in fan, and visor

Integral speaker, ambient sound and microphone in helmet

Aluminum case for helmet, 220v charger, 12v charger, headlamp charger and fitting instructions.

Smock carry bag with spine protector.

Trouser carry bag with blast plates and overshoes.

Transit bag for smock and trouser bags.

Optional custom designed steel storage box.

## Protection performance figures are for the Stanag 2920 17 grain (1.1gm) (Mil Std 662) fragment simulator. Also conforms to Mil Std 1472 re fitting and sizing

Front Collar 600 V50 (m/s) Back Collar 450 V50 (m/s) Jacket front 600 V50 (m/s) Jacket rear 450 V50 (m/s) Sleeve front 560 V50 (m/s) Sleeve rear 450 V50 (m/s) Hand covers 450 V50 (m/s) Front trousers with groin protection V50 690 (m/s)
Rear trousers V50 450 (m/s)
Front Thigh 690 V50 (m/s)
Front shin 620 V50 (m/s)
Back legs 450 (V50)
Shoe covers 450 V50 (m/s)



### Protection provided with Blast Plates attached to the front of the suit:

Type I V50	Type 2 V50
Collar 850 m/s	Collar 850 m/s
Chest 1400 m/s	Chest 1600 m/s
Groin 1400 m/s	Groin 1600 m/s

### **Protection Matrix**

Aramid

Anti trauma system.

Outer material: Nomex ® 111

### **Trauma Reduction**

Type I and 2 Up Armour Blast Plates have a double layered backing of a resilient, closed cell, linear foam which has a comprehensive modulus of 4350 psi (astm d 1621). The collar chest groin and front of the legs have built in anti trauma inserts.

### **Materials**

Helmet	Molded GRP skin with elastomeric Aramid core.  Anti – ballistic visor made from hardened acrylic/polycarbonate laminate Suspension harness – webbing and ballisticnylon.  Weight – 4.5kg V50 (helmet) – 610m/s V50 (visor) – 600m/s Optional 700m/s
Jacket and trousers	Ballistic inserts made from multi-layered water-repellent Aramid.  Outer cover – Nomex  Color – Military green  Weight – I 5kg  V50 – 600m/s
Blast plates	Armored steel Standard Type 1.V50 800 (m/s) Optional Type 2 V50 1100 (m/s)
Weights	Suit without up Armour Blast Plates 15.3 kg Suit with Type 1 Up Armour Blast Plates 26.2 kg Suit with Type 2 Up Armour Blast Plates 31.2 kg
Power Pack	A 12V power pack is provided with the suit, which has a special pocket on the back to accommodate it.  Output: 12v x 7a/h. Battery types Starved Electrolyte Lead Acid.  The battery has 2 outlets: 1. Dedicated to helmet ventilation and demisting system. 2.12v outlet for accessories.  Recharging: A mains charger is provided plus a 12v - charger cord for plugging into a 12v -dc source such as a cigarette lighter. A 90 % rapid recharge can be achieved in 15 minutes by plugging into a vehicle cigarette lighter with the engine running.





Ballistic EOD helmet with fan and NBC filter configuration

### **Ballistic EOD Helmet**

The EOD helmet is made from a sandwich construction system developed by and unique to the company and is fully adjustable by means of the three-point suspension. Incorporated in the helmet is the communication set consisting of an integral speaker and microphone.

Also incorporated in the helmet is an Air Ventilation system, which directs the flow of forced fresh air over the top of the helmet liner, across the visor and down over the operator's face ensuring efficient demisting and clear view. This system can be used in conjunction with a canister (NBC or chemical) configuration. The visor is removable.

Protection Performance	Helmet 600 m/s Stanag 17 grain (1.1) fragment simulator and visor 600m/s. Optional 700m/s
Ventilation and Demisting	This is provided by a helmet mounted fan. Maximum capacity: 250 liters/min.
Controls	Single knob variable speed. This is operator accessible on the top of the controller on the front lower RH side of the smock.
Weight	4.7kg

#### **Communications**

The helmet has a built in speaker and microphone which are connected to a controller mounted on the lower RH front of the smock. An external socket is provided on the controller for connection to a wireless or hardwire system. The hardwire communications system is designed specifically for EOD teams using EOD bomb disposal suits. The system provides communication between the bomb disposal operator and his back up at the base station. This is via 100m of cable mounted on a reel

The optional Hardwire duplex communications is supplied with the base station, headset, and 100m wire on a reel. The wire plugs into the side of the controller on the front of the smock.

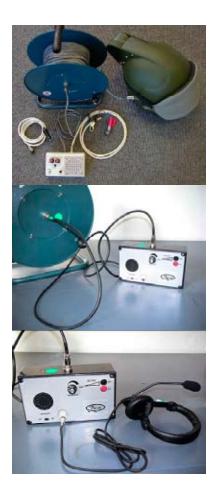
If two way radios are to be used the same socket is used. **However the type and make of the radio must** be specified so the correct interface can be assured. There is a switch on the side of the controller to change between hardwire or wireless. The controller on the EOD suit has three controls, one for volume control of communications between the EOD technician and the base station. The second controls the ambient sound\* volume and the third, which is on the top of the controller, the fan speed in the helmet.

The controller is supplied as part of the EOD suit therefore all systems come with an ambient sound facility. The base station for the Duplex Hardwire system contains a battery which will power the communications in the EOD suit in event of a failure of the battery in the EOD suit.

Ambient Sound Feature: An external microphone is mounted on the outside of the helmet and a speaker in the helmet on the LH side enabling the operator to hear noises in his environment. This has an automatic high decibel cut out. This facility is controlled with an ON/OFF switch and volume control accessible to the operator in a pocket provided on the suit.

Flashlight: A bracket and small flashlight is provided on the front of the helmet which is self powered .







#### **Jacket**

The jacket is a long sleeved, side opening design filled with flexible Kevlar ballistics. Provision is made on the front for the attachment of the rigid throat, chest and groin blast plates by means of buckles webbing waist strap and Velcro on the collar. The high collar provides overlap protection to the helmet and visor. Immediate removal of the jacket is achieved by use of the quick-release straps attached to the side and shoulder of the smock and quick release zips on the trousers.

#### **Trousers**

The trousers have fully adjustable supporting braces and wide Velcro waistband catering for small, medium and large sizes. At the rear of the legs a full-length zip is used. This offers the option of two widths, depending on the circumference of the operators legs. The overshoes are worn over the protective flap on the bottom of the trouser.





### **Cooling Suit Option**

The suit can be worn with commercially available equipment. Pockets to accommodate the power pack, controls and ice reservoir can be provided at no extra cost on the back of the suit.

The Cooling Suit is designed to offer a safe and cool environment for people who must maintain a high level of efficiency and concentration under extreme heat. The system is ideally suited for persons involved in bomb disposal and surveillance operations, as well as personnel in non-air-conditioned armored vehicles. The Cooling System uses ice water to remove body heat produced during strenuous work, especially in hot environments. The suit requires no hazardous pressurized canister or toxic cooling agents. Made from machine washable, fire retardant Kermel, the Cooling Suit also offers protection against heat and flash fire balls. Testing of the suit on the effects of over-pressure, fragmentation, ballistics, body impact and heat have shown this suit is suitable for use under bomb suits, chemical suits and many other applications where body heat removal is desirable.

The kit includes a longsleeved shirt with cooling on trunk and arms, long legged pants with cooling on legs, a close fitting open faced hood for head, a cooling unit and pouch, two water bottles, battery pack and carrying bag.

### **Specifications**

Performance	Heat Removal Rate: 270 watts (full suit) Endurance min. 45 min at 35 ° C (95 °F)
Cooling Unit	Control: On/Off Variable speed Pump: 12V Cold Source: Water circulating over ice Power: Connected directly to the EOD 12V power supply
Weights	Suit: I.0 kg Cooling Unit Dry: 0.5kg Ice : I.2kg Water: 0.7kg
Material	Garment: Kermel stretch knit fabric, flame retardant.
Sizing	Small: 150-175 cm; 40-75 kg Medium: 170-185 cm; 70-90 kg Large: 175-193 cm; 85-110 kg Compatibility: Worn next to skin under any clothing Cooling unit can attach securely to bomb suit via Velcro, strap and buckle Second water/ice bottle supplied for stand-by





#### **Optional Extras**

#### Lightweight Decontamination Suit

The lightweight decontamination suit is used to cover the body during decontamination of vehicles and equipment. The suit prevents water containing decontaminants and chemical agents from coming into contact with the skin for a specified duration.

Weigth	550 grams size medium.
Sizes	Available in three sizes to allow acceptable fit over a garment without restricting movement: Small, medium ,large.
Performance	The suit gives satisfactory wear during the decontamination process for a minimum of 2 hours without the penetration or permeation of liquids or gases.
Maintainability	The suit is a disposable suit. The suit is wash and maintenance free during its shelf life. If opened but not used the suit can after inspection to ensure that the seams are in perfect condition, be resealed and used later.
Design and Construction	One piece with an opening at back from shoulder to shoulder. The zip is covered with an outer flap fastening of Velcro. There is an attached hood with elastic around the face opening. The sleeves have elastic bands at the wrists.
Materials	Basic suit : Manufactured from TYVEK F . Sealing tape : TYVEK F sealing tape.
Post Usage Destruction	Depending on the chemical contamination on the garment it can be either incinerated without any harm to the environment or buried in a responsible way.

- **2.Wireless:** Two way hand held radios (two) VHF/UHF as specified by the customer.
- **3. Hardwire:** 100m range. A base station is provided with speaker, microphone, headset and tape outlet. Slipring facility enables communications to be maintained whilst the "hard wire" is being deployed. A control amplifier is provided with speaker, microphone and tape outlet. Hardwire with Slip ring facility.
- **4.Video Camera**: A bracket can be provided on the helmet for a small video camera powered from the 12v power pack. Transmission of data can be either by wireless or hardwire.

#### **Packing information**

The complete EOD suit with all the paraphernalia helmet, hardwire system, etc. are packed in 3 cartons with the dimensions

Suit	99 x 51 x 30mm
Helmet and protective box	60 x 45 x 90mm
Hardwire	60 x 45 x 30mm
Volume	55,5
Total weight of all the above	65kg



### Fragmentation protection shield

Art.Nr. 4700200



The EDU shield has been developed for use by explosive disposal and tactical teams.

Years of research and attention to detail have produced shield systems that combine high protective capability and superb manoeuvrability. The EDU shield is now in use in many countries throughout the world.

Developed to offer maximum over pressure and fragmentation protection during explosive disposal operations. The EDU is equipped with removable spring-loaded legs. In the stowed position, the legs hug the edge of the shield for easy storage and manoeuvrability. One easy motion releases the support legs into the deployed position, allowing the shield to be selfsupporting.

The shield is constructed of a multiple layer compression moulded Kevlar

### **Specifications**

**Materials** 

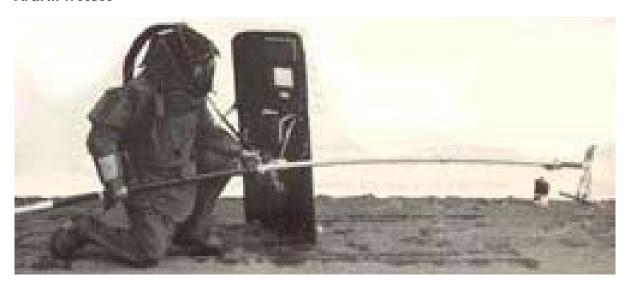
Tracer rais	composite laminate. Ballistic visor is made of Lexan.
Ballistic Protection:	V-50 rating using NATO STANAG 2920 test specifications. Shield only: 555m/s; Shield with cover: 630m/s. Ballistic protection rating against firearms available on request.
Overpressure Protection	Offers superior protection against blast overpressure, results available upon request.
Impact Attenuation	Forehead and forearm impact attenuating ethafoam pads are built into the inside surface of the shields. These are designed to absorb shock from fragment/bullet and pressure wave impacts.
Dimensions	130 cm high x 76 cm wide
Component Weights	Basic shield: 13.5kg Spring loaded legs: 1.6kg Optional shoulder harness: 1.0 kg Optional outer ballistic cover: 4.0 kg Optional edge shrouds: 2.5 kg
Outer Cover:	The optional add-on cover is composed of Kevlar enclosed in a tough nylon sleeve. Backed by the basic shield, it is designed to boost ballistic and fragment capture capabilities.
Handles	The shield includes interchangeable handles (hand and forearm) to facilitate left or right handed approaches, or a vertical mounted strap and foldaway handle system. Other handle configurations are available.
Optional Edge Shroud	The edge shroud is made of flexible loose Kevlar allowing the otherwise hard shield edge to conform to odd-shaped vertical surfaces (walls etc.)
Colour	Standard matt black (custom colours available on request).

NATO STOCK NO: NSN 1385-99-940-6443



### Telescopic manipulator

Art.Nr. 4700300



The new Telescopic Manipulator is an up-graded version of the original model, with a longer reach and the ability to lift and move a larger suspect Improvised Explosive Device (IED). The Telescopic Manipulator is manufactured from non-magnetic material and has been specifically designed to enable bomb disposal operators to handle explosive devices and dangerous materials from a relatively safe distance. It can be used in conjunction with the Explosive Disruption Shield to provide an even higher level of protection for the operator.

The new model is provided with a manipulator "claw" for grabbing and lifting a suspect article. The equipment is hand-operated to ensure maximum control and is supplied with a shoulder strap, together with an adjustable counterweight. It is designed to help the operator to lift an article weighing up to 5kg.

Weight	Claw/Hand Tkg Manipulator Pole & Claw 9.5kg Counterweight 8kg Total Weight 17.5kg
Length	Folded:Approx. 1.5m (4' 6") Extended:Approx. 5.8m (19' 0")
Material	Pole, Claw: High strength aluminium alloy Handguard: Polycarbonate Shoulder Strap: Nylon webbing Gearing: High strength steel/brass
Power	Claw powered.



## Lightweight EOD search suit

Art.Nr. 4700400



The Light Search Suit was designed for personnel involved in searching for and clearing of explosive devices, and has been developed to meet the specific needs of a search team.

Although the suit is significantly lighter than the standard EOD Bomb Disposal Suit, it provides the user with all round protection, unmatched mobility and virtually unrestricted movement..

The outer garment of the suit is constructed out of Nomex III and includes the latest Kevlar New Technology Fibers.

The suit comprises the following components:

Arms	Separate adjustable sleeves provide optimum movement
Jacket	Provides front, back, side, shoulder and neck protection with the additional optional feature of up armor pockets.
Groin Protector	This can be worn in either the lowered or raised position.
Trousers	The unique design provides freedom of movement and optimum protection to the legs
Helmet and Visor	This work in conjunction with the jackets high collar to provide the optimum protected area.

### **Suit Protection Options**

Suit type I	Jacket (front & back), arms and leggings: Fragmentation protection to 420m/s Helmet: Fragmentation protection to 449m/s Visor: Fragmentation protection to 449m/s
Suit type 2	Jacket (front & back), arms and leggings: Ballistic protection level II (NIJ 0101.03) & fragmentation protection to 550m/s Helmet: Ballistic protection level II (NIJ) & fragmentation protection to 550m/s Visor: Ballistic protection level II (NIJ) & fragmentation protection to 548m/s Enhanced chest protection: Ballistic protection level III (NIJ)
Suit type 3	Jacket (front & back), arms and leggings: Ballistic protection level IIIA (NIJ) & fragmentation to 600m/s.  Helmet: Ballistic protection level IIIA (NIJ) & fragmentation to 600m/s.  Visor: Ballistic protection level IIIA (NIJ) & fragmentation protection to 648m/s  Enhanced chest protection: Ballistic protection level III (NIJ)

**Standard sizes:** Small/Medium, Large and X Large

**Delivery:** 4 to 6 weeks

### **Electronic stethoscope 2020**

Art.Nr. 4800100





The electronic stethoscope is a compact and versatile listening device for the detection of weak impact sound waves travelling through solid material. It is a standard tool in IEDD, EOD and for squad teams. It assists in detecting and monitoring of suspicious sound (IEDD) as well as to listen from outside into rooms to investigate about people possibly hiding inside.

The 2020 is designed for use in stresssituations and therefore very easy to activate and operate. To activate the device just connect the headset to the stethoscope. The metal housing of munitions, the door and window frames, pipes, furniture and brickwork walls are good impact sound conductors, which support the use of electronic stethoscopes when searching for suspicious sound. Depending on the task the stethoscope can be preset and optimised for room monitoring or for object inspection by means of an internal commuter switch placed inside the battery compartment. The switch controls a band pass filter, which can give preference to the higher or lower frequency range.

The 2020 mainly consists of a metal cylinder with an integrated impact sound sensor, the electronic circuit board and the battery compartment. The waterproof sensor is built into the front end of the device. At its rear end the cylinder carries a socket to connect a headset. Both, sensor and the metal cylinder are made from non-magnetic material to avoid interaction with magnetic influence devices. The stethoscope operates on single 9V block battery of the PP3 style as used in commercial electronics. Alkaline (IEC no. LR61) and lithium version (IEC no. U9VL) are suitable.

#### The 2020 consists of the following components:

electronics with built-in impact sound sensor sensor cap

isolated contact pin

PU contact plug

dry battery

headset with connection cable

transit case

Technical Data

Power supply	9 V battery PP3, alkaline or lithium or rechargeable Ni MH version
Operation time	approx. 50h (alkaline battery) approx. 12h with Ni MH battery
Temperature range	approx 15° to + 55° C
Frequency range	in low: 400 Hz to 10 kHz in high: 1 KHz to 10 kHz
Amplification	approx. 80 dB depending on frequency
Dimensions	approx. 35 x 210mm (ø to length)
Weight	approx. 340 g electronics cylinder approx. 140 g headset

Subject to change without notice

80

### Electronic stethoscope 2001 C/K

Art.Nr. 4800200



The electronic stethoscope was designed for the field of EOD/IEDD. It is a support tool for bomb disposal technicians, personal protectors (VIP) and anti terror units from police and military. It supports the detection of weak sound waves travelling through packing material, housings of containers and similar solid material. The detected signals are amplified, processed

and send as audible sound to the headset.



The non-contact sensors detect high frequency emissions, oscillating components of conductive character and magnetic pulses from electronic timing devices. The hf non-contact sensors operate on a high frequency method and penetrates dielectric packing material such as i.e. wood, plastic, paper or brickwork. Alternatively the conventional impact sound (contact) transducer can be applied. Detected signals are transduced into an electric voltage and fed to an amplifier with adjustable filters where listening result can be optimised for a selective perception of wanted signals. The device is easy to operate and controls are limited to an ON/OFF switch, a calibrator for pitch and a calibrator for gain.

The 2001® C/K can operate on rechargeable batteries. The complete equipment is splash waterproof, shock proof and comes in a transit & storage case with specific liner.



# The 2001 C/K consists of the following components

- electronic box with control
- coaxial connection cable
- headset with connection cable
- non-contact sensor hf
- impact sound sensor
- non contact sensor hf & magnetic
- battery charger
- operation manual
- transit & storage case



### Technical Data

Power Supply	
amplifier	I piece 9 V block battery IEC 6 LR 61
operating time	approx. 20 h,
charging time + current	approx.10-14h, with 1160-100 mA
non contact head hf	rechargeable NiMH battery
operating time	approx. 6h at 20°C
charging time + current	approx.10-14h, with 60-100 mA

Dimensions	
amplifier	205 mm x 115 mm
non contact sensor (magnetic pulse)	200 mm x ø 30 mm
non contact head (hf)	240 mm x 95 mm (without handle)
impact sound transducer	ø 45 x 85 mm
transit & storage case	approx. 630 x 350 x 175 mm
frequency (band pass)	approx. I - 5,5 kHz
amplification	approx.115dB (700.000) at 4 kHz
temperature range	- 15° to + 55° C

Weight	
complete with accessories	approx. 14 kg
amplifier	approx. 0,6 kg
impact sound transducer	approx. 0,3 kg
contactless hf search head	approx. I, I kg
connection cable to reel	approx. 0,2 k
contact pin	approx. 0,1 kg
battery charger	approx. 0,16 kg
headset	approx. 0,25 kg
I m connection cable	approx. 60 g
cable reel, per 100m ext. cable	approx. 2,5 kg

Subject to change without notice!



## Electronic stethoscope 2000

Art.Nr. 4800300

**Content is missing** 



## **Blasting machine BM-380**

Art.No. 4900100



For use with rocket wrench and disrupters

### **Technical Specification**

Voltage of capacitor	approx. 380V
Capacity of capacitor	6.8 μF
Maximum resistance of the circuit	Α 60Ω, U 25Ω
Bridge detonators with steel wires of 3,5m length in series connection	10A, IU
Bridge detonators with Cu wires of 3,5m length in series connection	20A, 3U
Weight	approx. 300g
Dimensions (L x W x H)	approx. 135x35x55mm